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ABSTRACT

This serial issue features 6 members of the Indiana University System faculty who have focused their research on Latin America, past and present. The first article, "A Literature of Their Own," highlights Darlene Sadlier's research on Brazilian women's fiction and poetry that has led to an interest in the interplay of Brazilian and Portuguese literary worlds. The second article explores the research of Gordon Brotherston, who has based his studies on original Native American texts while focusing on the Nahua-speaking cultures of Mexico. The third article discusses Norman Bradley, who has used his painting inspired by Mayan art to journey in his personal inner world through shape, color, and paint. The fourt article discusses the work done by Geoffrey Conrad in San Antonio, Peru, in piecing together the elements of the lives of people who left no written language. By combining archaeology and ethnohistory in the study of later prehistory, Conrad hopes to generate hypothe es about the early development of Peruvian civilization. The fifth article focuses on K. Anne Pyburn, an anthropologist whose projects are founded on the principle of community involvement. While attempting to excavate a grouping of Maya ruins in the north central region of Belize, she tried to bring about economic benefits for the modern village nearby. At the same time, Pyburn hoped to track the development of economic classes among the Maya who once inhabited the site. The sixth and final article features anthropology professor Emilio Moran's study of secondary growth following deforestation in the Amazon rain forest. (DK)

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Research, both pure and applied, and creative activities are ongoing and essential aspects of life on the campuses at Indiana University. The quality of instructional education at any institution is tremendously enhanced if based upon and continuously associated with research and creative inquiry. It is significant, therefore, that the emphasis at IU not only is placed upon fundamental and basic research but also is directed toward developmental activities designed to discover those applications of research that characterize the efforts of many of our faculty in the arts and sciences as well as the professional schools.

As an overview of the diverse and interesting programs of research, scholarship, and creative activities conducted at Indiana University, *Research & Creative Activity* offers its readers an opportunity to become familiar with the professional accomplishments of our distinguished faculty. We hope the articles that appear in *Research & Creative Activity* continue to be intellectually stimulating to readers and make them more aware of the great diversity and depth of the research and artistic creativity underway at Indiana University. A full and exciting life is being created here, now and for the future. From our readers we welcome suggestions for topics for future articles in *Research & Creative Activity* that will demonstrate further the scholarly activity at Indiana University.

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Nunnery Uxmal, North Building, 1978, by Norman Bradley

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From the Editors

At the end of the third century, civilization first arose in the lands now known as Mexico, Central America, and South America, as well as on neighboring islands. At the end of the fifteenth century, Europeans invaded these lands, and periods of conquest, colonialism, and independence followed. Now, at the end of the twentieth century, the nearly 400 million people imprecisely described as Latin Americans face a multitude of cultural and environmental challenges. This issue of *Research & Creative Activity* features six members of the Indiana University faculty who have focused on Latin America, past and present, and shared their findings with us.

The first article highlights Darlene Sadlier, professor of Spanish and Portuguese and adjunct professor of women's studies. Sadlier's research in Brazilian women's fiction and poetry has led to an interest in the interplay of Brazilian and Portuguese literary worlds and, recently, an opportunity to make contacts with Mexican feminist scholars. She has continued to challenge IU students to interpret the provocative literatures of Brazil and Portugal innovatively and in depth.

Gordon Brotherston, a 1993–94 Guggenheim fellow and also a professor of Spanish and Portuguese, bases his studies on original Native American texts. His main focus is the Nahua-speaking cultures of Mexico. Brotherston asks his students to compare the experiences and perspectives of Native American peoples throughout the Americas. His work is helping to define the "vision" of America, investigating what literary critics and others have said about that vision.

Norman Bradley, associate professor of fine arts at Indiana University–Purdue University Fort Wayne, uses his paintings as a means of "taking a journey through my own inner world by way of art—shape, color, paint." Bradley's visits to Mexico to examine Mayan art have inspired his own creative work. IPFW art students have also benefitted from Bradley's immersion in Latin American and pre-Columbian art.

Professor of anthropology, chairperson of the anthropology department, and director of the William Hammond Mathers Museum, Geoffrey Conrad has a strong desire to explore a "tangible link to the past." In San Antonio, Peru, he and his graduate archaeology students have done that by piecing together the elements of the lives of people who left no written language to speak for them. By combining archaeology and ethnohistory in the study of later prehistory, Conrad hopes to generate hypotheses about the early development of Peruvian civilization.

For K. Anne Pyburn, assistant professor of anthropology at Indiana University–Purdue University Indianapolis and research associate at IU Bloomington's William Hammond Mathers Museum, it is important to consider the interests of the people living near archaeological sites. Her projects are founded on the principle of community involvement. One is a grouping of Maya ruins in the north central region of Belize. It is here that Pyburn is attempting to excavate the site—previously unknown to the outside world—while bringing about economic benefits for the nearby village of Crooked Tree. At the same time, Pyburn hopes to track the development of economic classes among the Maya who once inhabited the site.

The last article features Emilio Moran, professor of anthropology, who is using both satellite data and detailed information from field research in a study of secondary growth following deforestation in the Amazon rain forest. Throughout his career Moran has combined social and earth sciences, providing a model for the interdisciplinary potential of ecological research. His research interests have led to the creation of the Anthropological Center for Training and Research on Global Environmental Change (ACT), which he directs.

Though their intellectual interests are diverse, the faculty members in this issue share a connection—their devotion both to people and to place. It may be hearing the meter of an ancient poem, or seeing the light filtering through a canopy of rain forest leaves, but some personal experience has captivated each scholar whose profile appears on the following pages. Reading about their explorations of Latin America, we see its immediacy, its value, its beauty, its struggle.

P. Sarita Soni
Karen Grooms
Nancy Cassell McEntire
Michael Shermis

A Literature of Their Own

Darlene J. Sadlier, Professor of Spanish and Portuguese, Indiana University Bloomington

Imagine yourself on a plane bound for Rio Grande do Sul, the southernmost state of Brazil. After traveling for more than 24 hours you finally reach the capital, Porto Alegre, where you are introduced to a group of scholars who have come to the airport to greet you. They inform you that you are tomorrow's keynote speaker at the Federal University. Your lecture will be at 8:30 a.m., and you will give it in Portuguese.

While this situation may seem nightmarish to many, to Darlene J. Sadlier it was "hectic—but fun." She gave the early morning lecture and soon moved on to visit six other Brazilian universities, sweeping from south to north through a country as large as the continental United States, lecturing and serving as a keynote speaker wherever she went. Young and energetic—a lithe whirlwind—Sadlier has, since her first appointment at Indiana University in 1978, tackled this and dozens of other academic projects with what her colleagues and students describe as predictable resolve and enthusiasm.

Professor of Spanish and Portuguese and adjunct professor of women's studies since 1991, Sadlier estimates that her research time, first largely devoted to Brazilian literature, has followed a "natural progression" into Portuguese literature, culminating in what is now a "fifty/fifty balance" between the two cultures. During the past several semesters she has offered graduate and undergraduate courses on Brazilian literature, women in developing countries, contemporary Portugal, Latin American cinema, and modern Portuguese literature. Her most recent books also reflect her interest in the literatures of both countries. *The Question of How: Women Writers and New Portuguese Literature* (1989), examines women's fiction since the 1974 Portuguese revolution; her newest publication is a provocative Brazilian anthology, *One Hundred Years After Tomorrow: Brazilian Women's Fiction in the 20th Century*, published in 1992 by Indiana University Press.

It was Brazil that first riveted Sadlier's attention, and it is with Brazil—and Brazilian women writers—that her strongest allegiances remain. "Brazil first, and always," she says, smiling, when considering the scope of her research interests. Her attachment to Brazil was formed early in her academic career, at Kent State University.

As an undergraduate Spanish major, Sadlier leafed through a catalog in search of a language other than French (which she had already studied) to supplement her courses. She came across a small section of Portuguese, and—mostly out of curiosity—signed up. Her professor, Doris J. Turner, helped shape a career for the young scholar; years later Sadlier dedicated her anthology of Brazilian women's twentieth-century fiction to her mentor. "She was very important to me," Sadlier recalls. "She gave me a sense that there was more to being a language major than learning the language itself." Under Turner's guidance, Sadlier wrote an undergraduate thesis on the novel of social protest in Brazil, earned a double major in Spanish and Portuguese, and headed off to graduate school with a deep interest in Brazilian literature. Oswaldino Marques, her thesis director at the University of Wisconsin, was Brazilian; under his direction Sadlier's dissertation analyzed the poetry of one of the key literary figures in Brazil, Cecília Meireles. Today Sadlier is regarded as an expert on the poetry of Meireles, the subject of her first two books, *Imagery and Theme in the Poetry of Cecília Meireles: A Study of 'Mar Absoluto'* and *Cecília Meireles e João Alphonsus*.

Cecília Meireles (1901–1964) published more than 20 volumes of poetry during her lifetime. At a time when other poets were trying highly experimental work, Meireles was writing what Sadlier describes as "very quiet, private, introspective poems." Meireles and novelist Raquel de Queiroz (b. 1910) were two of only three or four women included in the Brazilian literary canon in the first decades of the twentieth century. Why were so few women recognized? And why were Meireles and Queiroz singled out?

Answers to these questions require, initially, a recognition of the political and cultural climate

Cecília Meireles (1901–1964) published more than 20 volumes of poetry during her lifetime.

within which Meireles, Queiroz, and other Brazilian women were writing. Although a significant number of women published their work during the first half of the twentieth century, most of them were unsuccessful in securing a reputation. When, for example, novelist and critic Amélia Bevilaqua was a candidate for a chair in the prestigious Brazilian Academy of Letters in 1930, the academy remained all male, voting against a proposal to admit women into its membership. During the 1930s and 1940s, literary critic and historian Olívio Montenegro assumed that most Brazilian women writers were better suited to make babies than to write novels. Writing in 1938, he offered this opinion:

> These are authors more faithful to sex than to literature. But literature isn't the best channel for sex—nor the most sound. Rather it's maternity that [these writers] understand well and from which they can benefit.

Few women writers could have garnered Montenegro's praise under these conditions. Ironically, Montenegro singled out Queiroz, whose novels often focused on the economic hardships of people living in Brazil's remote northeast, as worthy of serious study because her writing contained traces of "a virile personality."

According to Sadlier, Queiroz and Meireles also achieved a solid reputation because they could be understood in terms of the critical values of their time. Writing for *Fiction International*, she explains: "The inclusion of Meireles and Queiroz in the literary canon seems partly based on their ability to fit into aesthetic 'movements' already sanctioned by criticism; for example, scholars generally referred to Meireles as a 'post-symbolist' poet, and they frequently placed Queiroz in the tradition of nineteenth-century Brazilian regionalism."

Although these two women had found a place in Brazilian literary history, their works were not fully understood. Sadlier, for example, admits limiting her own earlier discussions of Meireles's work to issues of style. Then, in 1979, the Symposium on Hispanic Women: Literature, History, Anthropology, held in Bloomington, inspired Sadlier to combine her understanding of Meireles's style with issues of gender. Sadlier credits the important dialogues that emerged at that Indiana University symposium as a "turning point" for her own research on Meireles, helping her to rediscover the poet as a woman who addressed the question of female identity.

"People call Meireles a post-symbolist," she explains. "They say that she is not addressing social and political issues. But in fact, when you look closely at her poetry, you see there is obviously an image of an introspective woman, trying to understand who she is." Sadlier cites as an example a disturbing Meireles poem, "Ten Dancers in the Casino," in which emaciated women perform a dance of death within the dark and impenetrable territory of men—a smoke-filled Brazilian bar.

In the early 1960s another Brazilian novelist, Clarice Lispector, was gaining critical attention in literary journals. Like Meireles and Queiroz, says Sadlier, Lispector was described in ways that "made her inclusion in the canon possible." Some critics compared her with modernists James Joyce and Virginia Woolf; others saw signs of existentialism in her anxiety-filled middle-class characters. After Lispector's death in 1977, French critic Hélène Cixous did much to further international literary interest in the author. Brazil's intellectual life has long been influenced by France, Sadlier notes, and Cixous's recognition of Lispector increased her importance in that country as well as in the United States, where translations and criticism on Lispector abound. French feminism and the growing importance of women's studies in Brazil have contributed to a significant increase in the publication of novels and stories written by women in Brazil.

These stirrings of literary activity closely followed an important political event, the declaration of the United Nations International Women's Year in 1975. This event, says Sadlier, "stimulated the discussion of women's issues throughout the country." Women formed groups and held conferences to examine their own representation in "all facets of Brazilian life, including literature and the arts." Two feminist newspapers, *Nós Mulheres* (We Women) in São Paulo and *Brasil Mulher* (Brazil Women) in Londrina, kept women informed of activities throughout Brazil.

Further, a gradual return to democracy after a decade of what Sadlier describes as "intense political repression" in the late 1970s gave women the opportunity to address controversial issues "without fear of governmental reprisal." This political breakthrough, called *abertura*, offered women in Brazil the chance to become more involved in the public domain "as never before in the history of the country. They were articulating their concerns about social, economic, and political matters and beginning to influence the outcome of elections." With *abertura*, she points out, "feminist and working-class women's groups were given a space in which to organize, to voice their concerns regarding the oppressive policies of the military regime, and to wage demands for better social services, including child and health care facilities."

As the climate for women's rights improved, Sadlier became more and more eager to revisit the country to which she had devoted so much of her academic work. In 1988 she got her chance. Funded by the U.S. Information Agency, Sadlier headed to Brazil on what she now describes as the most important academic mission of her career, traveling from the Federal University of Rio Grande do Sul in the south to the Federal University of Paraíba in João Pessoa in the north in slightly over one month.

Despite the tour's fast pace, Sadlier made lasting contacts with feminist scholars throughout Brazil. In her role as a feminist academic specialist, Sadlier brought information about the latest issues and debates in feminist literary criticism and theory. Her goal was to provide an overview of the field, and her lectures were supplemented by a variety of resource materials provided by the Indiana University Women's Studies Program. In each university, scholars were eager for information and advice on establishing women's studies programs and developing curricula and bibliographies. "In some areas, such as the northeast, the economic situation is very poor," says Sadlier. "The scholars that I met were working under very difficult circumstances. They had few books. Sometimes they didn't even have paper."

Sadlier's tour of Brazil also brought her in contact with a British scholar, Maggie Humm, sent from England on an academic tour similar to Sadlier's. The two were struck by the extraordinary effort that Brazilian scholars were making to promote outstanding feminist research in a country with 1,000 percent annual inflation. According to Humm, imported books were "priced at the equivalent of a Brazilian teacher's weekly salary."

The "Three Marias"—Portuguese writers—from left to right: Maria Velho da Costa, Maria Isabel Barreno, Maria Teresa Horta. Authors of Novas Cartas Portuguesas, *they were arrested and put on trial in 1972 for having written an "obscene" book.*

After they returned to their own countries, Sadlier and Humm collaborated on a volume of *Fiction International* that was devoted to literature and issues involving women from developing countries. The research that Sadlier did for this volume, published in 1990, also formed the basis for her 1992 anthology of twentieth-century Brazilian women's fiction.

"Once the volume for *Fiction International* was finished," Sadlier recalls, "I thought that there really wasn't a book in print that gave a sense of women's writing in Brazil.

Fernando Pessoa as "himself"

I felt that it was important to produce one." Sadlier's Brazilian anthology brings together 20 authors, arranged chronologically from Carmen Dolores, writing in 1907, to Sônia Coutinho, writing in 1985. The women address topics that range from marriage, female identity, class values, and economic hardship to sexuality, lesbianism, and erotica. "At the very least," Sadlier states in her introduction, "I expect readers in the United States will find the anthology informative. The writings collected here have never before been published in English. Of the twenty authors represented, all but two or three are virtually unknown in North America, and a few have been forgotten in Brazil."

Sadlier's anthology introduces the richness and variety of Brazilian women's writing to English-speaking audiences. It also enhances Sadlier's teaching objective of the past 15 years: to present her students with the best and the most provocative literatures of Brazil and of Portugal, and to challenge them to interpret these authors innovatively and in depth. One student, a Brazilian, took Sadlier's seminar on the northeast Brazilian novel last spring, expecting not to like it. "I had always hated literature," she confessed to Sadlier. The power of the novels that Sadlier had assigned, however, gave her a new appreciation for fiction as well as for the issues of class and of economics in her own country.

Sadlier has earned the respect of her students in basic language classes as well as in graduate seminars. David Crum, an anthropology student, met Sadlier in 1988. Advised that he would have to learn Portuguese in order to understand Brazilian Amazon culture, Crum enrolled in Sadlier's second-year Portuguese class. "Language classes can be dull," Crum recalls, "but she made ours very lively. We acted out situations where we had to speak Portuguese. The dreary routine of memorization never dominated." Crum went on to take survey courses and seminars from Sadlier. In Sadlier's seminar on Brazil's northeast authors, he recalls feeling both humbled and enlightened. "I would read the texts," he says, "and go to class thinking that I knew them. She saw so much more in them, so many insights and ambiguities and ironies. I would leave the classroom dazzled."

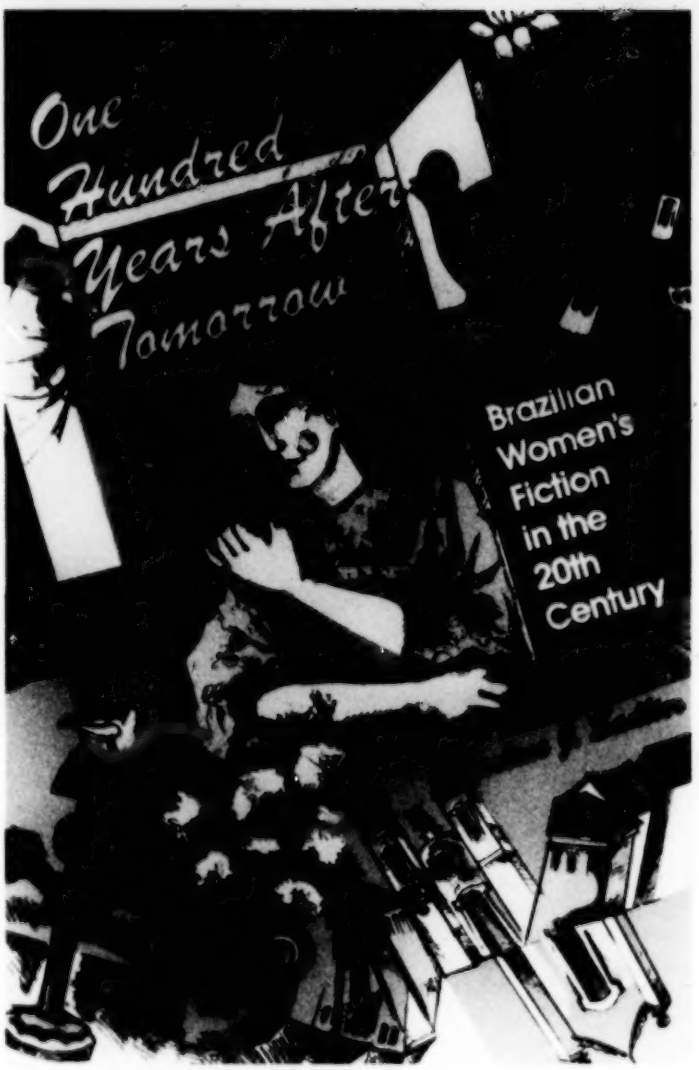
Marcia Stephenson, assistant professor of Spanish at Purdue University, studied with Sadlier at IU and invited Sadlier to be a member of her dissertation committee. Because of Sadlier, Stephenson featured Brazilian writer Clarice Lispector in her dissertation. "Darlene went out of her way to help me, giving me bibliographies, talking to me about theory," says Stephenson. "She treated me and all of her graduate students as colleagues, not as minions. She made us feel that our ideas counted." Stephenson notes that Sadlier encouraged her to publish while she was in graduate school; this kind of guidance, she says, helped her "move into academe more efficiently."

Currently the coordinator of the IU Portuguese program (a program that she has directed almost unceasingly since 1978), Sadlier has made a significant effort to reach out to area studies programs, including Latin American and Caribbean Studies, West European Studies, and African Studies. She has developed a number of undergraduate culture courses, including one on Mozambique and Angola (two former Portuguese colonies); and authors from Lusophone Africa are part of the standard reading for students enrolled in the third-year course on readings and conversation in Portuguese. Sadlier's colleague, Heitor Martins, teaches one of the only courses on African literature in Portuguese in the United States.

Sadlier's current research has led her to one of the most important Portuguese writers, Fernando Pessoa. Pessoa's thousands of unpublished works, discovered after his death in 1935, have provided what Sadlier describes as "a literal treasure trove" for scholars. Throughout his life Pessoa wrote under the guise of pseudonyms, or, as he called them, heteronyms. These alter egos—dozens of them—were characterized by different names, different literary styles, and different signatures. Pessoa gave the most prominent ones biographies describing their different backgrounds, professions, and even dates of birth and death. Part of Sadlier's project on Pessoa explores the genesis of these multiple selves in his juvenilia. "These artistic forgeries," she says, "raise intriguing questions about the function of authorship." She also is examining Pessoa's transformation from a multiplicity of selves into a cultural icon of post-revolutionary Portugal and a symbol of national identity.

The interplay of Brazilian and Portuguese literary worlds continues to fascinate Sadlier. Minimally affected by each other for most of this century, Brazilian and Portuguese writers have enjoyed more communication since the 1974 revolution—especially within the last five years. According to Sadlier, "Portuguese and Brazilian writers are focusing more on each other's work, each other's style, each other's issues. The Brazilian *telenovela* [soap opera] has had a major impact on Portuguese cultural life, and Portuguese authors are being increasingly published in Brazil."

A tireless correspo ent, Sadlier maintains the dialogues she has established with Portuguese writers and with Brazilian academics. Since her 1988 tour through Brazil, for example, Sadlier has helped three Brazilians travel to IU to do research with the Women's Studies Program. Within her own country she communicates regularly with Portuguese scholars on both coasts—and with Brazilian scholars in the Midwest.



Sadlier's anthology, One Hundred Years After Tomorrow: Brazilian Women's Fiction in the 20th Century, *was published by the Indiana University Press in 1992.*

Sadlier continues to win converts to the literatures that she has made her academic focus, and she continues to expand her own horizons as well. In 1991, an academic specialist grant from the U.S. Information Agency took her on another fast-paced tour of four universities, this time in Mexico. Her lectures there on feminist theory and criticism brought her into contact with scholars whose work Sadlier describes as "serious and intelligent." Sadlier's trip to Mexico has presented her with a number of important research possibilities.

With deepening Brazilian connections leading to further scholarly exchanges between Brazilian universities and Indiana University, steady interest in Lusophone Africa, new research unfolding on the unpublished work of a famous Portuguese author, and recent contact with Mexican feminist scholars, Sadlier has much to sustain her. "These are exciting cross-cultural times," she says. "I am glad to be a part of them."

—Nancy Cassell McEntire

This Other, Different World

In the Nahua language of the Aztec people, the word for poetry is "flower-song." The poets of the Aztec imperial court, before that court was destroyed in the sixteenth century, called their works perfect plants. They saw that a poem, like a plant, grows organically, unfolding its beauty and beneficence. One of them wrote the following:

I am drinking the liquor
of the flower
the narcosis is here
switch into it
the flowers are here in your hands
the flowers of pleasure spread
so shaken in themselves each
is iridescent
the drum is a growing
intrusion, dance
exquisite narcosis stains my heart,
the singer's
I bear the iridescent downpour,
receive it
just inside my heart the
song-flower snapped
I disperse the flower-song
I am going to be frozen in
rapture sometime
my heart will be mixed with
the flowers
and *Les fleurs nobles*, corolla
of the Princes
I could cry over the 'sometime'
I tell my flower fame, my
song name
I'll be somnambulant sometime
my heart will be mixed with
the flowers
and *Les fleurs nobles*, corolla of
the Princes

—from the sixteenth-century manuscript *Cantares Mexicanos*

"When I first read this kind of poetry," says Gordon Brotherston, professor of Spanish and Portuguese at Indiana University, "I remember thinking: this is another aesthetic, this is another sensibility. There are things going on here which I'd like to know more about, quite quickly. It seemed to me, in those days, to mean something utterly different."

Gordon Brotherston, Professor of Spanish and Portuguese, Indiana University Bloomington

The days Brotherston refers to were the mid 1960s, when he was a recently appointed lecturer at the new University of Essex in his native Britain. His academic interest in the literature of Spain and Latin America, combined with his childhood fascination with "Red Indians" and his sympathy for them as victims, piqued his interest in the earlier culture of Mexico. He was helped in his research by a visiting Fulbright scholar, the American poet Edward Dorn, who became his friend and collaborator. Such a collaboration was invaluable, says Brotherston, for at the time there was no academic tradition of Native American studies in Britain. In fact, he says, English-speaking scholars in general were very much behind in the direct engagement with major Native American texts. The translations that did exist had been done without much regard for the literary structures and dimensions of these "foreign" texts.

"I've always been completely fascinated by the idea of getting in touch across barriers which otherwise seem to be uncrossable," says Brotherston. "This [literature] seemed to offer an insight or an entry into this other, different world."

This different world was, of course, all but eliminated by the European invasion of the western hemisphere beginning 500 years ago. In his *Book of the Fourth World* (Cambridge University Press, 1992), Brotherston calls the history of the Americas during this period "a story of depredation for which the planet has no parallel. . . . In the course of just a few centuries its

original inhabitants . . . have come to be perceived as a marginal if not entirely dispensable fact in the continent's destiny."

Brotherston agrees that his political concern is not difficult to detect. Since both literature and politics deal, ultimately, with human subjects, he says the two fields have always been inseparable in his own mind. Partly because he is an academic, he "became more and more painfully aware of how much academic work itself can be put to the cause of the dominant culture," even in activities as seemingly innocent as mapping, place-naming, compiling population statistics, and spelling. Nevertheless, says Brotherston, he has always been more a literary person than a political activist. As he continued to work with Native American texts, he "became more and more surprised, gratified, if you like, by how much could be won from this literature for its own sake, at the same time as one could be making these other [political and humanitarian] points." Perhaps his political focus, his political strategy, would have been different, Brotherston says, if he had not been "electrified" by the Aztec poetry he read in 1966, and if he had not thought some of the Native American texts among the most finely constructed and brilliant that he had ever encountered.

Brotherston says in the prologue to *Fourth World* that the optimal way to represent Native Americans in all phases of their struggle for identity and freedom is through their books, "the texts through which over time [the] people have represented themselves." But many books were destroyed by the invading Europeans, and others simply have not survived to our time. Scholars may work, then, only with texts that have been published or that are somehow available, which means that of the hundreds of languages that existed in the Americas, only a very few can provide material for academic study and for political motivation.

Spaniards kill the royal Inca Tupac Amaru in Cuzco, 1572.

The major languages studied, says Brotherston, are Nahua, the Aztec language; both the highland and lowland languages of the Maya; Quechua, the language of the Incas, which is still spoken by millions of people; and Guarani, spoken by peoples in Paraguay and parts of Brazil and Bolivia.

The power of Native American texts to create personal and political transformations should not be underestimated. Brotherston cites the example of Miguel Angel Asturias, a Nobel laureate from Guatemala who, "ignorant of the indigenous culture and literature, held and wrote racist opinions about what should be done to the Indians of his country." Then Asturias read the *Popol vuh*, the story of creation written down in the sixteenth century by the Maya Quiché of that of that part of Central America. Like Saul on the road to Damascus, says Brotherston, Asturias underwent a complete change. Inspired by the *Popol vuh*, wishing to pay homage to it, he wrote the novel *Men of Maize*. Asturias's son took as his own the name of the hero of that novel, and later joined a Maya Indian guerrilla movement and became their spokesman.

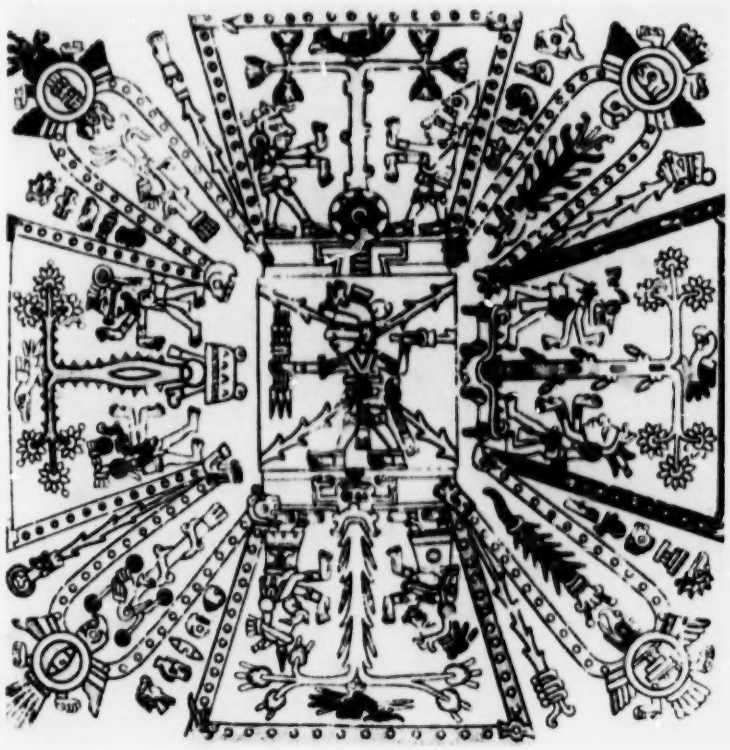
The *Popol vuh* has been called the Bible of the Americas; it describes a series of creations, culminating in the creation, from maize, of human beings. Like many Mesoamerican texts produced after the arrival of the Spanish, it is written in the Roman alphabet. As an expression of the culture of the Maya Quiché, says Brotherston, "it does for them what certain books of the Old Testament do for the idea of a state of Israel. There is a direct connection between this book and a political reality." Similar opinions are held by the recent Nobel Peace Prize winner Rigoberta Menchú, herself a Maya Quiché.

There is also a connection between the *Popol vuh* and what Brotherston calls in *Fourth World* the communally held faith among Native Americans in the earth as matrix, or source, and in the life and philosophy that explicitly conserve nature's resources. Adam appears in the first chapter of Genesis and is given dominion over the earth and its creatures. By comparison, the *Popol vuh* describes a cosmogony in which human beings are late arrivals in the scheme of the creations; everything else and everyone else has been around much longer. "That, psychologically, is very important," says Brotherston. "One of the things you can never forget while reading the *Popol vuh* is that we are like late guests at a party and should not behave as if the party were held only in our honor." This belief that all creation is important, he says, that nature is not a fair target for human exploitation, is a very profound and consistent motif in Native American mythology.

In fact, says Brotherston, the consistency of Native American creation myths is remarkable. "One of the constants is in the diversity of creation," he says, which is in marked contrast to the straightforward creation found in the biblical Genesis. "The normal mode [in these works] is for there to be quite a long process before the world as we know it finally emerges. A cosmogony that involves multiple creations is another of the characteristics. Those creations, known from Chile to the United States, reproduce, in some cases blow for blow, the same phenomena, the same catastrophes, including the flood, a prolonged eclipse, volcanic eruptions and a rain of fire and ash, and a hurricane."

The literature through which the indigenous people of America represent themselves is not all from the distant past, however. Native languages continue to be spoken, says Brotherston, and literature of all kinds continues to be composed in them. Through his travels in Latin America and his contacts with Native Americans, Brotherston has compiled a bilingual anthology of recent verse in five native languages. He has titled the book *An Kalu* (in press), "which in the Cuna language of Panama means 'our stronghold' and serves here to denote all that is held on to, in speech and literature, by . . . Native Americans generally."

By publishing poetry in their native languages, says Brotherston, the authors have made an important literary choice. "In each case they gained a range of expression not necessarily available in an imported language like Spanish." Native American languages, for example, express gender and person differently, which can critically affect a poem's interpretation.



The rain god known as Tlaloc in Nahua brings together the waters above and waters below.

There are also philosophical concepts that are unique to the Americas, including the importance of agriculture and the interconnection of time and space. With very few exceptions, says Brotherston, the agricultural ethic has always been quite intricately bound up with the lives and religions and myths of Native Americans. Thus "there is a reverence for plants which is for us very difficult to understand at first." As to time and space, the Native American tradition never fully divorces the two, says Brotherston. For this reason, it never produced systematic charts or maps like those of the Europeans, with their grid systems and their representations of the earth's surface independent of time. "Nowhere in American cosmogonies do we find the world considered independently of time,"

Maize plant identified as human being, according to the creation story told in the Popol vuh

says Brotherston. Native texts often included symbolic maps, such as the Mendoza codex, which depicts place names and spatial directions, as well as the dates a ruler held power, and the inflow of commodity tribute from the provinces to the Aztec capital. It represents, therefore, a dynamic and complicated conception of the world, unlike the static picture shown in European maps.

The choice of the *An Kalu* authors to use their native language also has political significance, according to Brotherston. It "allows each poet an attitude towards the official Spanish of his country, either by exulting in autonomy and refusing to admit even a word of it, or by incorporating it judiciously." Thus the poems "make their own act of resistance."

Brotherston calls the anthology a mere indication of the powerful native verse that has appeared over the last several decades. That the poems exist at all is proof, he says, of the determination, enduring and resurgent, of native peoples. Those peoples and their literatures have existed continually, of course, but have rarely been acknowledged. In addition, says Brotherston, for a long time many of the native societies chose not to communicate their literature to the invaders of their lands. They guarded their accounts of creation, for example, out of the belief that revealing them could damage or even destroy their cultures.

The main focus of Brotherston's scholarly attention is on Mexico, and particularly on the Nahua-speaking cultures. Yet he does not want to be considered only a Mesoamerican scholar. He continues to travel in South America, making and maintaining contacts with writers and teachers there. "I think, indeed, one can understand Mexico better if one is looking at it from Peru or Argentina or Chile," he says.

Brotherston first traveled to Latin America in 1966, primarily as a representative of the University of Essex. He was establishing academic connections and buying books for the university library. He was also doing his own research and serving as the editor of a Latin American series for the Pergamon Press. The trip was a very important experience for him, says Brotherston, and, in terms of language, he felt suddenly freed of restraints. "There's a whole universe," he thought at the time. "It's Spanish-speaking, it's Portuguese-speaking, it's some-other-thing-speaking. They [languages] feel quite different now because they are part of a much broader reality."

In 1968, Brotherston spent a year as a visiting professor at the University of Iowa—a year that was highly rewarding, he says. He met a great many people who were also interested in Native American studies. He started doing small translations of native texts, working with other scholars, at a time when such work was suddenly very much in the air. Then, in 1970, Brotherston was appointed as a fellow at the Alexander von Humboldt Institute in Berlin and Hamburg. The Germans have a long tradition of working with Native American materials, says Brotherston, and were the first to decipher Maya hieroglyphs. The fellowship year was a turning point in his career and absolutely vital to his development as a scholar of Native American literature. Now, for the academic year 1993–94, he has received a Guggenheim Award, which will take him to Mexico. He plans to explore the significance of place signs in native texts, like the Mendoza Codex.

Brotherston came to Indiana University, in 1990, because he had always heard the university spoken of favorably. The Latin American collection at the IU Libraries impressed him, as did the fact that the IU Press had produced some very important volumes in his field. The university has good scholars not only in Latin American studies, says Brotherston, but in related fields, such as comparative literature, folklore, and history. The American Indian Studies Research Institute has also been useful to his research, he says, and its director, Raymond DeMallie, helped considerably on *Book of the Fourth World*.

Brotherston introduces both graduate and undergraduate students to Native American literature. Undergraduates are interested in the subject, he says, especially in the possibility of comparing the experience of native peoples in the United States with those of peoples in other countries in both North and South America. Brotherston offers an undergraduate course each semester on the culture and civilization of Latin America. Concentrating on anthology stories, he works into the discussion his knowledge of the native cultures from which the stories emerge. This methodology works fairly well, he says. "You can go quite a long way back in this fashion and often enough there are very gratifyingly direct references in the stories to the Indians or to a particular word that has come from the Indian culture."

"One of the things you can never forget while reading the Popol vuh *is that we are like late guests at a party and should not behave as if the party were held only in our honor."*

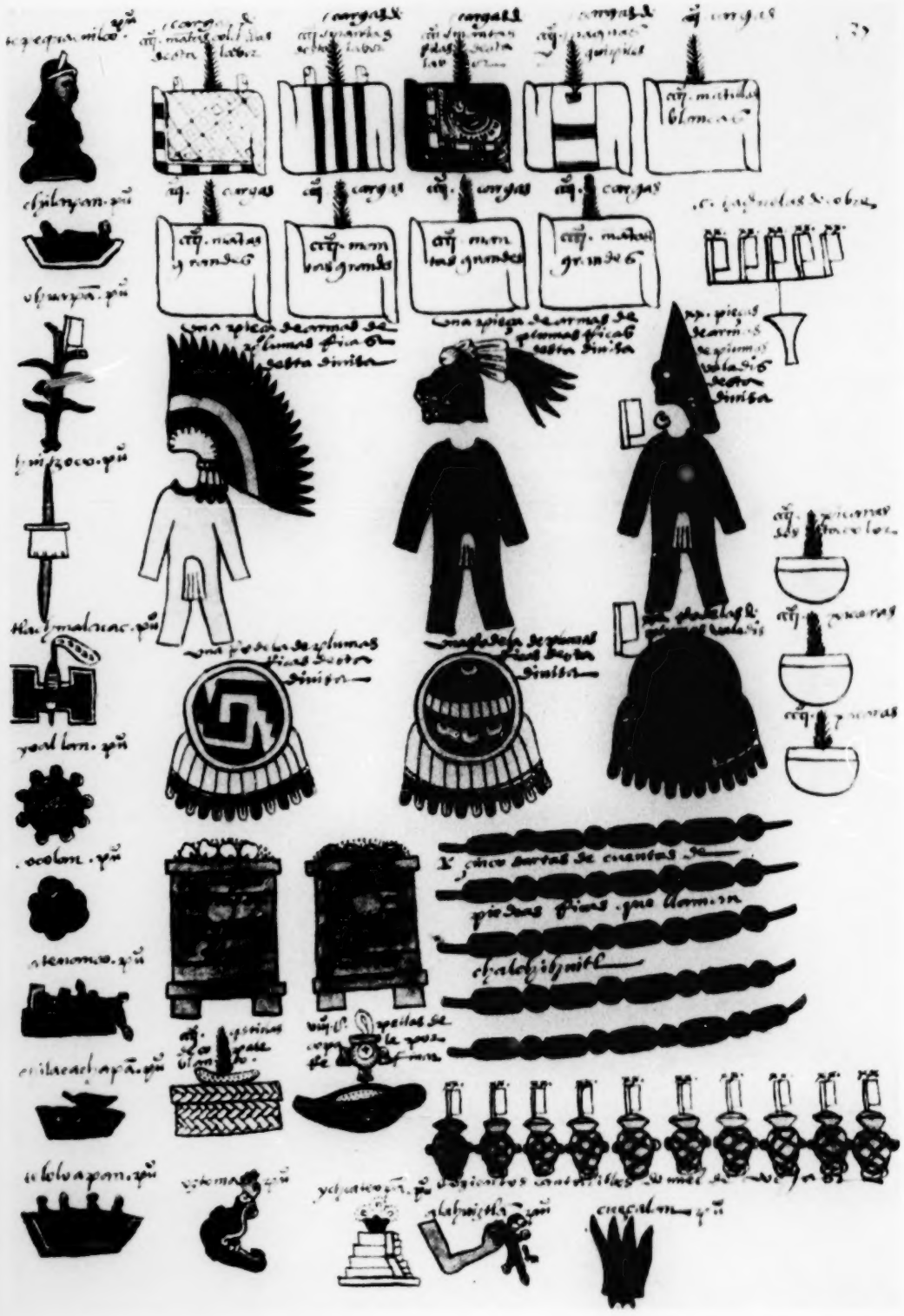
In the fall of 1992, Brotherston taught a graduate course, "The Vision of America as a Version of Genesis," which was based in part on the assertion that the Americas have had their own genesis and that it is up to us, as scholars, to discover it. The class sought to define the "vision" of America and investigated what literary critics and others have said about that vision. Close readings of the *Popol vuh* and other indigenous cosmogonies followed. Finally, the class brought all of this material together and examined its influence on the works of major Latin American novelists.

Brotherston has also taught a graduate course in Latin American poetry, the objective of which was to demonstrate that Latin American literature has its antecedents not only in Spain and Europe, but also in the native literary traditions proper to the Americas. The course focused particularly on a book of poems, *Homage to the American Indians*, by the Nicaraguan writer Ernesto Cardenal. It was designed to situate the poems in terms of the cultures to which they refer, and in relationship to the texts that have come out of those cultures.

The impact those texts can have is clear. Asturias lived in a country full of Mayas but never noticed them, never recognized their humanity, until he read the text of the *Popol vuh*. Cardenal, too, has written about ancient Mexico, and the Maya, and the rain forests. "In every case, in this homage," says Brotherston, "he invokes, quotes, rephrases, and integrates native texts produced by those cultures." It is a literary exercise, adds Brotherston, and also important in its political implications. Instead of merely exclaiming "Oh, the poor Indians," Cardenal asks his readers to listen to what those Indians have to say.

In his books and in his teaching, Brotherston makes it possible for us to listen to Native Americans, to listen to their literature, their classics, their own culture.

—*Tom Tierney*



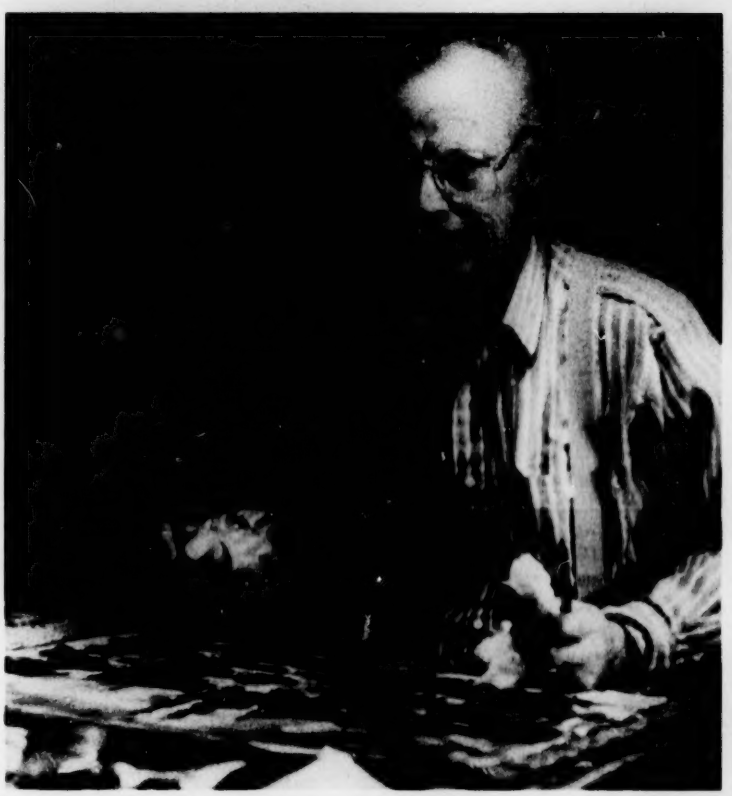
Articles of tribute payable to the Aztec capital Tenochtitlán from places in the present-day Mexican state of Guerrero; place signs run down the left margin. Goods depicted include blankets, military uniforms, bushels of maize and beans, a copper ax head, copal incense, jars of honey, jade necklaces, and wooden bowls.

Encounter of Two Worlds

When he first went to Mexico thirty-odd years ago, painter Norman Bradley began two simultaneous journeys. His life and art have had to do, both literally and symbolically, with travel, with exploration, with encounters. Over the years he has wandered through most parts of Latin America. And he has painted, taking a "journey through my own inner world by way of art—shape, color, paint." Intuition, says Bradley, has always been his guide.

Most of Bradley's work is nonrepresentational, though he doesn't call it abstract, asserting that "all visual art is abstract." His media—oil and, to a lesser extent, watercolor and acrylic—and the aesthetic principles that frame his work reflect the heritage of European painting. But he says "the signs, symbols, imagery, and surface are more a direct reflection of my involvement over four decades with the art of ancient Mesoamerica, such as that of the Maya, Zapotecs, and Tarascans, and the Nahua-speaking people of central Mexico. Both sources are an integral part of my work as a modern artist."

Bradley, associate professor of fine arts at Indiana University–Purdue University Fort Wayne, sees his paintings as one result of the 500-year-long encounter between two worlds. But he notes an ironic reversal of "new" and "old" in the intertwining strands of his work. "The European aspect of the 'Old World' is really the 'new' of my work—that is, modern abstract art as it has evolved in the twentieth century and as it has influenced me. The 'New World' represents the 'old' of my work—that is, the influence of ancient American art. These artistic traditions represent the dual sources of my painting and the reason my life's work embodies this encounter of two worlds."



Norman Bradley, Professor of Fine Arts, Indiana University–Purdue University Fort Wayne

Although his interest in Mexico and native Mexican art bore fruit in the pre-Columbian art history classes that he has taught, that interest did not manifest itself overtly in Bradley's own painting for some years. Nevertheless, the artist's work has been shaped in part by his research on pre-Columbian art history and the landscape and history of Latin America.

Stela B, rendered in oil on canvas, exemplifies in both form and name the union of disparate influences in Bradley's work. The painting is reminiscent of Mayan stelae, upright stone slabs carved with intricate, stylized figures and hieroglyphs. Exuberant plumes of yellow and red paint suggest the feathers commonly found in traditional Mayan art. The *B*, he says, is for "Bradley, the roots of which, for me, lie in eighteenth-century East Yorkshire, England."

Mexico and Latin America held no special fascination for Bradley as a high school student, and he never expected that his first youthful encounter with Latin America, specifically Mexico, would turn out to have a lifelong influence on his art and his teaching interests. But he did want a break from his hometown environs in the guise of a foreign adventure. So in 1955, after a year of study at the Fort Wayne Art School, Bradley and two friends decided to travel south of the border to "haul up stakes and get out of Fort Wayne" and to continue their studies.

At the end of the summer, the season's wages in hand, they headed south in a 1940 Plymouth to begin studying Spanish and art at Mexico City College. "It was all so new to me, and so very, very different, and I fell in love with Mexico very quickly. It was almost as if I had some connection with it," Bradley recalls. He completed his B.F.A. at Mexico City College in 1959, spent three years in the service, and returned to Mexico to earn his M.F.A. at the University of the Americas in 1964. "By the time I completed my master's degree I was absolutely dedicated to the study of pre-Columbian art history," he says.

Although Bradley finds Mayan painting, sculpture, and other art forms interesting, his attention has been focused mainly on Mayan architecture. The ancient Maya lived in an area that included modern-day Belize and Guatemala and portions of Mexico, Honduras, and El Salvador. They left thousands of ruins scattered throughout Mexico and Central America, providing ample material for decades of study and inspiration and a broad geographic base in which to work. Bradley's locus of interest has gradually shifted from the Maya of central Mexico, where he first encountered their rich legacy, to those of the Yucatan and Guatemala.

Starting in 1978, Bradley completed over a period of about eight years a series of 30 paintings of Mayan ruins. He recalls, "It was a sort of sideline with me because my usual work is nonrepresentational. But I was doing both types of painting at the same time. I did the paintings of the ruins partly as illustrations. I was hoping to get them published, but never found the right vehicle for them." The paintings are in the spirit of the drawings of English architect and artist Frederick Catherwood, whose illustrated travelogues about Central America, the Middle East, Asia Minor, and Europe were popular during the nineteenth century.

Stela B, 1989

Bradley's painting of Structure K-5 at Piedras Negras, Guatemala, is the only image in color of that pyramid that Bradley knows of anywhere in the world. The painting was inspired by the work of Mayanist/archaeologist Tatiana Proskouriakoff, who published her wash drawings of various structures and stages of structures in *An Album of Maya Architecture* in 1946. Bradley based his painting of K-5 on Proskouriakoff's drawing from the *Album*, on various

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archaeological sources, and on photographs of other pyramids taken by his wife, professional photographer Dixie Bradley. He added color to K-5 "somewhat arbitrarily" because the pyramid no longer exists. The result, says Bradley, is "conjecture in an archaeological sense. The color is almost romantic color, the color of the atmosphere of the tropical rain forest more than a specifically literal archaeological rendering."

Bradley's paintings portray different types of Mayan ceremonial structures from the different regions of Central America. For the most part, explains Bradley, the pyramid portion of a structure served as a platform for a temple, often of modest size, set on top. A few pyramids contain tombs; others are solid. Although the 30 paintings have not been published, a number of them were exhibited in Indianapolis during the Pan-American Games Festival of the Arts in August 1987, and elsewhere.

Bradley perceives an intuitive connection between his archaeological paintings and his nonrepresentational oils. He says the connection is based on his experiences in various parts of Latin America and "here, on this side of the Atlantic, in the Americas, as opposed to living in Europe with all that cultural baggage." Although he acknowledges the influence of pre-Columbian art on his own paintings, he "very studiously" tries not to imitate the outward appearance of that art. Still, Bradley incorporates into his work such elements as the X, the Mayan symbol for the day or the sun, and rounded shapes similar to Mayan hieroglyphs, which are oblong cartouches with rounded corners.

The creative and interpretive processes in art interest Bradley as much as the content of a painting. "A lot of people see nonrepresentational painting and think, 'well, the artist just slapped a bunch of paint on the canvas.' Nothing can be further from the truth. I struggle with these things.

"The color is almost romantic color, the color of the atmosphere of the tropical rain forest more than a specifically literal archaeological rendering."

I've got about thirty of them going right now. I work them and I go back and I change them. Sometimes I even have a show, and then go back and change them. I finish only about six or seven paintings a year."

Bradley's paintings are "painterly," he says. "Values of color are more important than delineation; mood is more important than some kind of idealization." He seeks inspiration not only in his travels to Latin America, but also in his own backyard. "I love all the irregularities in nature. I go out and see all the beautiful trees and all the sticks down on the ground, all the 'litter of nature,' and I really enjoy all that. I guess some of that gets into my painting."

While his experience in Mexico influenced his painting in subtle ways early on, Bradley notes that his formative years as a painter occurred during the abstract expressionist period and that his work followed that direction for many years. In particular he mentions his affinity for the COBRA (Copenhagen, Brussels, and Amsterdam) group active in the late 1940s and early 1950s. "There's a primitive directness in those works that has, strangely, a kind of beauty about it," he says. "Paintings that are really slick and precise and so forth kind of irritate me. I don't want the artist to do all the work. I want to be able to fill in with my imagination and complete the thing in my own being."

Bradley's nonrepresentational paintings are worked on two-dimensional canvases, yet he introduces a third dimension with texture. He says, "I have a tendency to get involved with paint and surface. It's not an intentional use of some sort of texturizing medium; it's just paint, it's just because I really work on the paintings." The result is a final work composed of many layers. "I'm not interested in my paintings being pretty," Bradley says. "I think beauty comes out in other ways. To me texture and paint are beautiful. When you try to create an aesthetic, it's a much different story than just creating paintings. You're trying to create something that's not just new—it's not just novelty for the sake of novelty. Actually, there's very little that's new in here. My painting is borrowed from all kinds of other artists."

Yet the meanings of Bradley's paintings are all his own. A work of art, he says, can have multiple meanings, as does his painting *Caribe*, or "Caribbean" in Spanish. "The Yucatan is the western edge of the Caribbean," he says. "When we're there, which we are frequently, we stay in the Caribe Hotel, kind of our home away from home. Of course, you'd have to know these things exist to understand the layers of meaning in the title." Although *Caribe* does not deliberately depict anything Caribbean, the loose, circular strokes of blues, greens, near-whites, and contrasting darks of this four-foot-square painting suggest the setting that inspired it.

Bradley is deeply concerned with composition in his own work and in that of his students. "I'm almost a classicist," he says. "What I'm really laboring on is the sense that a work is well composed—the way the eye moves around, the way it balances." Bradley describes his working style as close to that of an "action painter." When he works on a painting, he does so intensely and quickly, sacrificing some element of control to the creative passion. He points to his finished painting *Red* and explains, "I may have eight or ten paintings under here that I didn't think made it. Then I got to this stage and said,

Structure K-5 at Piedras Negras, 1979

OK, it holds together, this is a gestalt, a unity of expression that says right now what I think this painting can say."

Reaching that stage of completion can take a long time, Bradley notes. "I have another painting here that I had worked on for three years and just couldn't get right. You can develop a mental block, which is why travel is very good for me. We went to Europe, and some things happened that triggered something in me. I came back and worked on the painting for maybe two hours, and it was done! It was almost like a bolt of lightning.

"My painting is like travel, a voyage into the edges of the unknown. That's what's exciting about it—you never know quite what's going to happen. Then it all gets changed, and I get exasperated, to the point where I think well, this is utter rot, it's worthless to go on. And the next minute it pulls together, and for days I'm walking on clouds."

Freedom to paint what and as he wants is important to Bradley, and he recognizes that not all artists have that luxury. "It's nice that I have a teaching job that makes a living for me," he says. "I don't have to sell paintings. I've sold a good number in recent years, but I don't have to, so I can follow my own intuition and I don't have to please anyone." Teaching gives him the opportunity to pass on some of his knowledge of and love for Latin American culture and pre-Columbian art to his students.

Bradley teaches 400-level courses in art history, including Western art of the nineteenth and twentieth centuries. His favorite, though, is the pre-Columbian art history course, which surveys all of the time periods and styles of ancient American art, including those of the Maya. Although the majority of his students are fine arts or art history majors, faculty members in other departments often refer students to the pre-Columbian art course. "Some people take the course because they're just curious, or are planning a trip to Latin America," Bradley says.

Whatever their reasons for enrolling, students are exposed through the course to a part of the world about which most know very little. "So many people are so culture bound, they know nothing about Latin America. Some students have even retaken the course out of interest; one student took it three times—an A student; he didn't have to take it. I asked why, and he said 'I just like it.' I think it opens windows to something new."

This summer Bradley's journey will come nearly full circle. He plans to explore once again the area west of Mexico City, near Morelia in the state of Michoacan. "It's an area I haven't been to for a while." he says. "I need to renew my contact with the place. There are some ruins there I've never been to and want to see."

Bradley notes that many people think the Maya no longer exist. Yet, he points out, they are the largest Indian group north of Peru. "You can go to Guatemala and in one little area you see the Quiché Maya, go down the road and there are the Cakchiquel Maya, go to a different place and find the Tzutuhil. Twenty-three languages are spoken. These people are all Maya, but each subgroup has its own version of history, its own costumes, its own culture." Parts of southern Mexico are similarly rich in cultural diversity. Furthermore, Mexico has some 10,000 archeological sites, and there are thousands more in Central America. He says, "I hope we'll rediscover the Americas. Americans have such strong bonds with Europe—I think what language connects even oceans can't separate. But Latin America is an enormously rich are culturally, so interesting, and so much to see. Where else can you find an ethnic culture like the Maya?"

—Sheila Webster Boneham

Comparing Ancient Andean Civilizations

Geoffrey Conrad, Professor of Anthropology, Indiana University Bloomington. Here Conrad is shown at San Antonio, Peru, recording observations on one of the structures.

For only a moment it seemed like a good idea—to put the white powder in a plastic bag and bring it back to Bloomington for analysis. It had been found under a layer of dirt inside a box excavated in the prehistoric village of San Antonio, Peru. But then Geoffrey Conrad's inner voice said, "Now, wait a minute, Geoff. Before we go walking through Miami airport customs with some white powder from Peru, even prehistoric white powder from Peru—you'd better get an advance permit from every agency of the U.S. government you can think of.

"It's not the kind of thing I want to be sitting in the airport at three in the morning trying to explain," says Conrad, professor of anthropology, chairperson of the anthropology department, and director of the William Hammond Mathers Museum.

The white powder is still in Peru. Conrad will wonder about it until he can legally bring it back to the Bloomington campus for analysis, though he speculates that it is probably hallucinogenic and was used for ceremonial purposes. It is also only a tiny piece of the jigsaw puzzle that constitutes his work in San Antonio. There, among the pottery shards and fallen fieldstone walls of houses, for seven years Conrad and his graduate archaeology students have been painstakingly piecing together the tangible elements of the lives of people who left no written language to speak for them.

While Conrad admires and sometimes envies historians who have the advantage of chronicles and records and even stone tablets, he is challenged by the piecemeal nature of his work. And there is another facet of archaeology that draws him to the discipline. "For me and for most archaeologists, the link to the past is so much more immediate when you're holding in your hand something that's connected to people. You can't put individual names to those people the way historians can, but the sense for me is stronger with the object that was made and used and discarded in the past than it is with what's written down and transmitted," he explains.

Conrad first enjoyed this sense of immediacy at an early age. "When I was about seven and a half, we moved into an old farmhouse built around 1775, and we had a garden in the back," he says. "I would find things like old cut nails and pottery. I just thought it was fascinating that there was in the ground some tangible link to the past." Conrad's interest might have remained one of many, except for an imaginative sixth-grade teacher who took an interest in him. Among the books she suggested he read were Prescott's *Conquest of Mexico* and *Conquest of Peru*.

"So I was going to be an archaeologist, and I was going to work in Latin America on the Aztecs and the Incas," Conrad recalls. He says the interest went dormant until he was in high school and beginning plans for a major in college. Again, it was a teacher (of history) who restarted his thinking about archaeology and pointed him in that direction.

Today, looking out at a sea of student faces in the classroom, Conrad realizes that a profession in archaeology is not for everyone. In his sophomore ancient civilizations course, he tells the students that few if any of them will become professional archaeologists. He is more concerned with developing their interest in archaeology and showing them how to maintain it for the rest of their lives, no matter what they go on to do.

He says to the undergraduates, "The big questions that interest me aren't going to get answered in my lifetime. There are no final answers. There's no punch line to this joke at the end of this semester. I'm going to tell you what we know now, and I'm going to try to get you to think about it logically, coherently, so that you can put together an interpretation and back it up."

Conrad's graduate students already know that, of course. They have followed him to Peru, risking harassment by guerrillas as they conduct research at the San Antonio excavation. While still apprentices, Conrad's graduate students get practical on-site experience, the reality of what they have read in their textbooks and heard in classrooms. The students learn vital basics that seasoned archaeologists already know—how to plan for the orderly excavation of a site, including creating grids of the site if necessary or appropriate, dividing the labor, carefully tagging artifacts, and other tasks.

At San Antonio the graduate students oversee squads of three or four laborers. Research is an on-the-spot, ongoing affair, sometimes sending Conrad back to the United States to consult

This carved wooden box, with remnants of hallucinogenic powder in its center compartment, was found buried in one of the more elaborate houses at San Antonio.

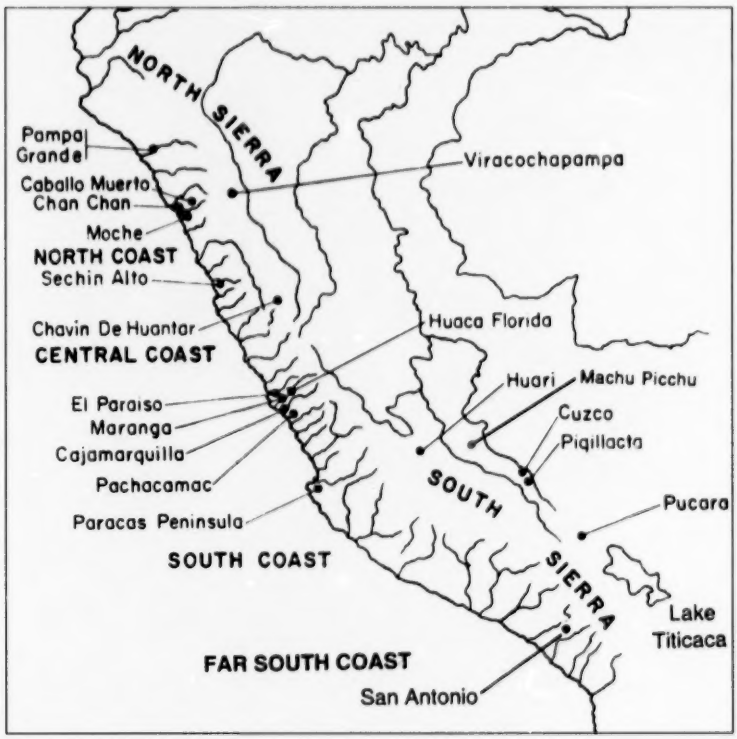
resources that may shed some light or provide some clues about a discovery. "That process goes on all the time. You're constantly analyzing and reanalyzing. You come back home and think about the things that you found. You invariably think of things you wish you'd asked while you were down there," Conrad says.

Because most countries today have laws that forbid the removal of archaeological artifacts, the research process Conrad and his graduate student assistants are involved in has to include anticipation of what various objects mean in relation to the total mosaic of culture. "For me, since I can't bring most of the things I find back, even temporarily, I have to do the analyzing down there," he says.

Some of the tools Conrad uses in analyzing what he and his students find are written materials. Though the people of San Antonio did not have a written language, the Spanish introduced theirs to Peru in the 1530s. "There are major Spanish chronicles, early accounts of Peru by Spanish missionaries and governmental authorities," Conrad says. "These are the people who at least encountered the Inca Empire and its provinces directly and wrote down their observations, sometimes misunderstanding what they saw or recasting it in European terms. Nevertheless, they were there, and I wasn't. So what they had to say is something I can work with."

Together, the written chronicles of the missionaries and others and the archaeological data found by Conrad allow him to develop a clearer understanding of the civilization. By combining archaeology and ethnohistory in the study of later prehistory, he hopes to generate hypotheses about the early development of Peruvian civilization that can be tested against the purely archaeological remains of the more remote past. "In essence, I am trying to establish an archaeological baseline—an understanding of how late prehistoric practices and institutions are reflected in the ground—that can be carried further into the past," Conrad says.

The main focus of Conrad's research is the relationship between people of the Lake Titicaca Basin and those of the eastern and western slopes of the Andes in the time between 1000 A.D. and the Spanish conquest. Conrad says, "My recent work has had three interrelated thematic emphases: the role of religious beliefs in cultural development; the recovery of cultural 'intangibles'—social,



Archaeological sites of Peru

political, and religious ideas and institutions—that are not directly preserved in the archaeological record; and the interaction of those 'intangibles' with more material phenomena such as technology and subsistence economy in Central Andean prehistory."

At the same time, he is very much aware that his approach is contrary to what many other archaeologists believe. He explains that archaeologists usually look for the causes of prehistoric cultural development in material phenomena: environment, technology, demography, and subsistence economy. That approach treats religion as secondary.

"The theoretical position can be very comforting to archaeologists," Conrad says. "In archaeology, it is much easier to obtain and interpret data on material phenomena than on nonmaterial ones, and the temptation to see causality in that which is most readily retrievable is understandable. Through my Peruvian research I have come to believe that it is more useful to view material and nonmaterial phenomena as influencing each other."

Apprentices who work on archaeological sites may be less interested in theories than in finding something exotic. Conrad's graduate students already know that spectacular finds at an excavation site are few and far between. "Most of them have had some field experience before," he explains. "It's typical of the way I was trained, the way most archaeologists in this country are trained. You start out as a digger. In Peru my students are busy with taking notes and collecting the material, while I go around, circulating among the four or five excavation units."

The graduate students Conrad has taken to San Antonio have come from the Universities of Chicago and Michigan, as well as Indiana University. There have also been a number of Peruvian graduate students. Part of the learning process for these students is the realization that at a site like the one at San Antonio, it is impossible to excavate all of it. "You can't excavate five acres. There's not enough time or money to do that. So what I have to do is to determine what we're actually going to excavate if we're going to get some representative samples out of the site," Conrad says.

Conrad's own path from anthropology major to professional archaeologist led him from the foothills of Wyoming, where he worked two summers at a paleo-Indian site dating back to 10,000–8,000 B.C., to Labrador, where he and colleagues found an eighteenth-century Eskimo winter house, the highlight of their archaeological efforts.

Convinced that he was going to be an Arctic specialist, Conrad wrote his senior thesis on findings in Labrador. But in the summer of 1970 he had the opportunity to fill an empty staff position at an archaeological project in Chan Chan, Peru. Conrad did not anticipate rekindling an enduring interest in the area, however.

"I thought it would be one summer's exotic experience, and then I would be back to the Arctic region again. And so I went down speaking no Spanish and arrived at Chan Chan two or three weeks after a major earthquake," says Conrad. Though he had previously seen aerial photos of the site, nothing could have prepared him for what he saw when he got there.

"Literally the biggest site I had ever worked on would have fit comfortably on the front lawn of the Mathers Museum along Eighth Street. Chan Chan was the capital of a late prehistoric empire, and its ruins cover ten square miles. There is a well inside one of the ten royal palace compounds that is about the size of a football field," he says.

Even the necessity of walking around with a Spanish dictionary in his hand and having to write down what he wanted to tell the laborers did not dampen his enthusiasm for the work. Digging in the Arctic had yielded its odd bones and tools found at temporary campsites, but Chan Chan was vastly different.

"As I walked around that first day, I saw a piece of cloth sticking out of the ground. I knew it was prehistoric cloth. Here was this six-hundred-year-old piece of cloth sticking out of the ground, and you could have put it into the washing machine and it would have been as good as new. I had never seen that kind of preservation before," he says.

Conrad was hooked. By 1984 he and colleagues from the Field Museum of Chicago, Southern Illinois University, and the Universities of Florida, Chicago, and California, Santa Barbara had formed a cooperative effort to explore the prehistorical cultures of the southernmost part of Peru. Their work was underwritten by grants from the National Science Foundation, the National Geographic Society, and the National Endowment for the Humanities.

Conrad explains that studying prehistoric Peruvian civilizations is important because these civilizations formed independently from outside influences. In archaeological terminology, they are considered "primary" or "pristine" and in that sense are comparable to the ancient civilizations of Mesopotamia, Egypt, the Indus Valley, and China.

Important as delving into the past of the Central Andes may be to Conrad and his colleagues, political events in Peru have had a chilling effect upon the few North American archaeologists who have specialized in that area of the world. The guerrillas of the *Sendero Luminoso*, also known as the Shining Path, have attempted to paralyze the country with terrorist activities that disrupt archaeological pursuits, which are unrelated to contemporary politics. For a variety of reasons, Conrad has not taken a team of students to Peru since 1990. For the past three years he has spent his research time sifting through a backlog of data and mentally organizing the material into cultural categories.

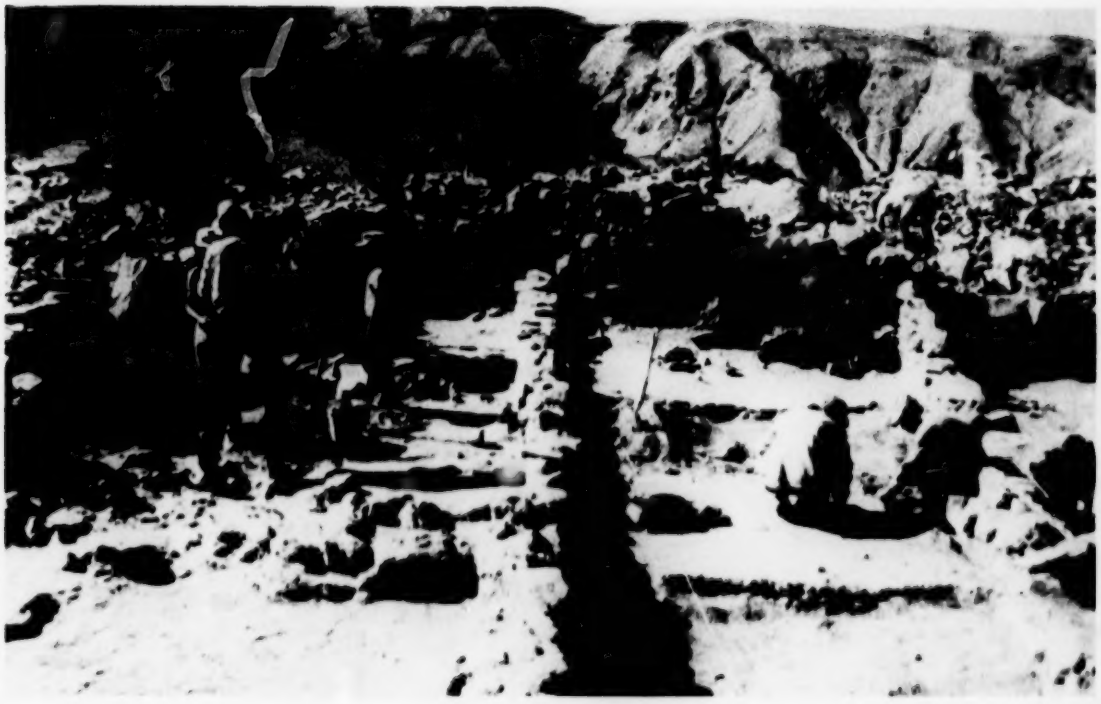
Aerial view of one of the royal palace compounds at Chan Chan

Conrad recalls the experience of a fellow archaeologist who was given 24 hours to pack up and get out after Shining Path guerrillas shot and killed his laborers. "I, individually, am a small target, but I will not expose my family to such dangers as exist in Peru today," Conrad comments. It is unclear what effect the arrest in September 1992 of the guerrillas' leader, one-time philosophy professor Abimael Guzmán, will have on archaeological activity.

Unless there are changes that involve increased danger, Conrad plans to return to Peru next summer to do at least two things. The actual excavating at San Antonio is finished for the moment, but Conrad intends to reevaluate his earlier finds in order to answer some intriguing questions, and he will study possible new sites in Chile or Bolivia, where it is safer. Abandoning the San Antonio site will not be easy for Conrad, but he is quick to explain that there are strong cultural relationships between the people around San Antonio and the groups in Chile and Bolivia.

Wherever he continues his comparison of ancient civilizations of the Andes with those of the Lake Titicaca Basin, Conrad will take along his somewhat controversial hypothesis that the material and nonmaterial aspects of prehistoric Peruvian culture influenced each other. Thus he will continue to challenge the traditional view that religion was secondary and played a role in maintaining the status quo.

"My interpretation of my research is that a series of religious reforms played vital roles in both the rise and fall of the Inca Empire between 1440 and 1532 A.D.," Conrad says. "Through reworkings of the basic Andean religious tradition of cults of the dead and ancestor worship, the Incas developed a central state cult in which the mummies of dead rulers were the crucial, tangible links between the Inca people and their pantheon."



Excavations in progress in several of the houses at San Antonio. The powder was found in the long "room" (actually a courtyard) at center right.

Royal mummies in their palaces—such as the ones in Chan Chan—were treated as if they were still alive, retained ownership of their lands, and continued to receive income from taxes they had levied for their own benefit, Conrad explains. The emperor Huascar (1525–1532) tried to disenfranchise the royal mummies and set off a civil war, which tore apart the Inca Empire before the arrival of the Spanish.

Conrad does not oversimplify this point of view to the extent of claiming that religion was the only cause of the Inca Empire's rise and fall, however. His 1984 book *Religion and Empire* (coauthored with Arthur Demarest and published by Cambridge University Press) argues for a multicausal interpretation, emphasizing the interaction of religious, economic, social, and political forces at work in Inca history.

Conrad is coeditor, (again with Demarest) of *Ideology and Pre-Columbian Civilization* (1992), published by the School of American Research Press. Conrad is also coauthor, with Garth Bawden, of *The Andean Heritage: Masterpieces of Peruvian Art from the Collections of the Peabody Museum*, published in 1982 by the Peabody Museum Press.

Since 1972 Conrad has written 18 articles for scholarly journals and coauthored 8 additional ones, ranging in topic from modern archaeological approaches to ancient cultures to "What's Right with University Museums." Nineteen of his reviews have appeared in *Archaeology, Ethnohistory,* and other publications.

As a speaker, Conrad has delivered papers and been invited to lecture in Peru and Canada, as well as in many parts of the United States. In 1990, 1991, and 1992 he was a traveling lecturer for the Archaeological Institute of America (AIA), speaking in 10 different cities on a topic he knows well, "The Rise and Fall of the Inca Empire." He will go on tour for the AIA again this year, speaking in three more cities.

Meanwhile, Conrad will be contacting officials in Washington to find out what papers to file in order to bring the Peruvian powder into the United States for analysis at the university. He knows that the hallucinogenic powders used by prehistoric cultures came from plants grown far from San Antonio. He hopes to gather information on the powder's origin—information that will increase his knowledge about trade in the region. Thus Conrad will add another piece to the archaeological puzzle on which he has built his career.

—Rose McIlveen

Archaeology in the Public Interest

K. Anne Pyburn, Assistant Professor of Anthropology, Indiana University–Purdue University Indianapolis. She is examining Belizean artifacts found at Chau Hiix and on Albion Island.

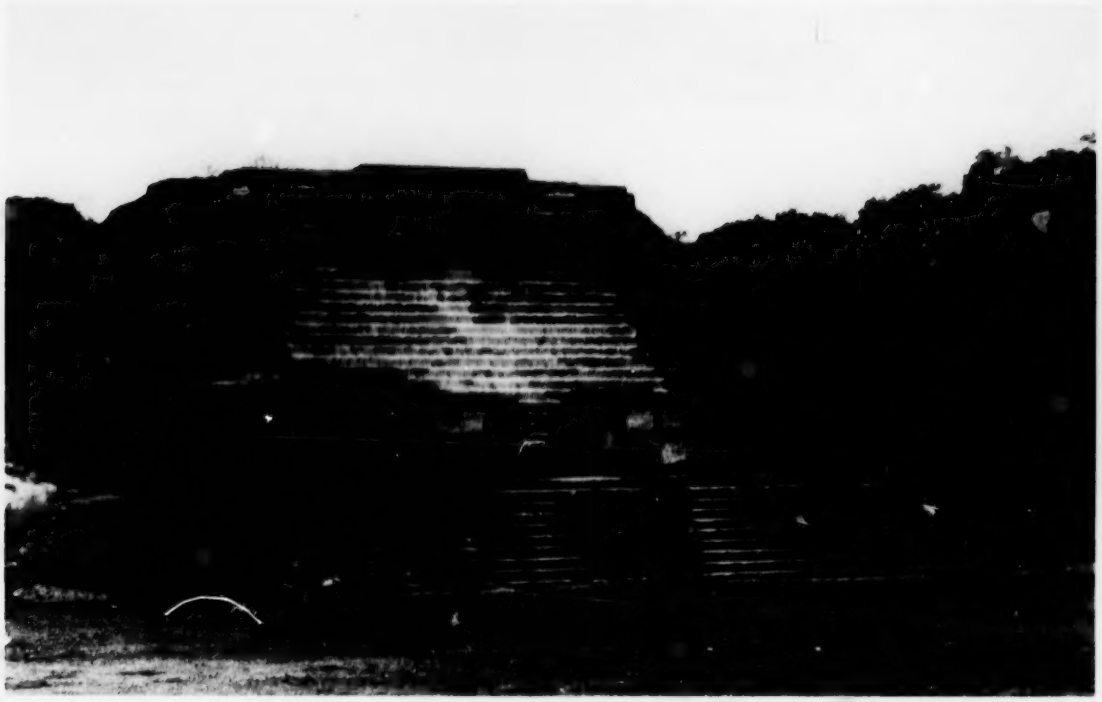
In 1975 K. Anne Pyburn was an undergraduate anthropology student spending the summer at an archaeological dig in Pittsburg, Texas. She recalls that when locals asked members of her research team about their excavation, the questions were not taken seriously. "One day in a store they asked some of us if we had found any diamonds," Pyburn says. "Their idea about the work of archaeologists was that we look for things to sell. Instead of acknowledging that they were interested, we laughed at them. If only we had engaged them in what we were doing. The members of that community were perfectly bright, intelligent people who just happened not to know much about archaeology. We need to encourage the interest of people living near archaeological sites."

No longer will Pyburn disregard the concerns and interests of the people most immediately affected by an archaeological dig in their midst. Pyburn, an assistant professor of anthropology on the Indianapolis campus and a research associate at IU Bloomington's William Hammond Mathers Museum, is now embarking on two projects founded on the principle of community involvement.

The first is the excavation of Chau Hiix, an extraordinarily well-preserved grouping of Maya ruins in the north central region of Belize, a former British colony. The second is the Project for Archaeology in the Public Interest, an effort by Pyburn and her husband, IU Bloomington associate professor of anthropology Richard Wilk, to foster an approach to their discipline that seeks participation by—and benefits for—community members.

Since Pyburn and Wilk were first entrusted with information about the location of Chau Hiix approximately three years ago, the story of their "discovery" has been covered extensively in IU and Indianapolis publications and on local television. Residents of the Belizean village of Crooked Tree, an area where Wilk had conducted ethnographic studies for several years, eventually placed such confidence in the two anthropologists that they led them to the site, which had previously been unknown to the outside world. It was the Crawford family of Crooked Tree, Rudy and Gloria Crawford and their children, who decided to share the local secret after Rudy Crawford had thoroughly researched archaeological issues. The Crawfords and their neighbors hope that Pyburn will help preserve the site while bringing about economic benefits for the struggling village.

An hour's motorboat ride from Crooked Tree, among a maze of interconnected lagoons and flat, thickly vegetated islands, Chau Hiix rises from the jungle—enveloped by earth and vines, but still obviously the remains of a city.



The temple at Altun Ha gives an idea of what the temple at Chau Hiix may look like. The Chau Hiix site is between Altun Ha and Lamanai, two well-known archaeological sites already excavated.

According to Pyburn, who has worked in places ranging from Arizona to Yemen, Chau Hiix is a marvel because it apparently has never been looted. Among the 28 structures at the site—including several palaces and a ball court—Pyburn has found incense burners, figurines, tools, and weapons literally scattered about on the jungle floor. Looking through rodent burrows in the mound of earth that covers the 70-foot palace, she has seen the red-painted walls of the structures themselves.

While observing the site, Pyburn and other visitors are also being observed—by howler monkeys, hummingbirds, coatimundis, kinkajous, and even a rare jaguarundi. It was this creature, a small wildcat related to the jaguar, that inspired Pyburn when she named the site; *Chau Hiix* is the word for the jaguarundi in Kekchi, a Maya language spoken in Belize.

Pyburn is aware of more than the twittering and screeching of wildlife at Chau Hiix. In an interview with Sandy Matthys Roob of Indiana University–Purdue University Indianapolis Media Relations, who accompanied Pyburn to the site in March of 1992, Pyburn said, "When you come away from Chau Hiix, it's not like you've been for a walk in the forest. You feel like you've been to a place that has a presence. . . . The things we find here on the ground immediately connect us with the last Maya people who were living here, working here, thinking here, and doing Maya things here." Pyburn estimates that human occupation began at the site in the Early Preclassic Period of Maya history (ca. 150 B.C.) and ended in the early 1500s—the time of the European conquest.

Pyburn's passion for conserving the historical, environmental, and spiritual value of Chau Hiix has led her to an intense search for funding of the excavation. A recipient of a 1991 IUPUI Outstanding Young Faculty Award, Pyburn devoted an entire semester to writing grant proposals and speaking to groups about the project. Racing against time, she often worries about looting, the environmental impact of the discovery, and the possibility that people in Crooked Tree will become disillusioned about the project. Despite these unknowns, she remains hopeful. "I see the environment in Belize deteriorating rapidly," she says. "Refugees are flooding into the country from El Salvador and Honduras. Crime has increased. Yet somehow Crooked Tree has given me hope."

Pyburn says the optimism and constructive energy of the residents of Crooked Tree, qualities that typify the Belizean national character, are what make her hopeful. Belize is multicultural, populated by Hispanic Americans, Asian Americans, African Americans (such as the Crawfords), and Native Americans, among others, and though it grapples with a low per capita income and high infant mortality, the country boasts a literacy rate estimated as high as 90 percent. "Belizeans not only know how to read, they *do* read," Pyburn says. "Perhaps some of

that is the legacy of the British school system, but the British have been gone for ten years now. Belizeans I have known put a tremendous emphasis on education, at the government level and in families." She attributes the Crawfords' wisdom in the protection of Chau Hiix to this fact, and she intends for their prudence to be rewarded with jobs for people in the Crooked Tree area—both in the excavation of the site and in the tourist industry that she hopes will develop around the excavation. "Chau Hiix is an amazingly pristine and lovely place," Pyburn says. "These people have foregone short-term gain, and now they should get some reward for their selflessness."

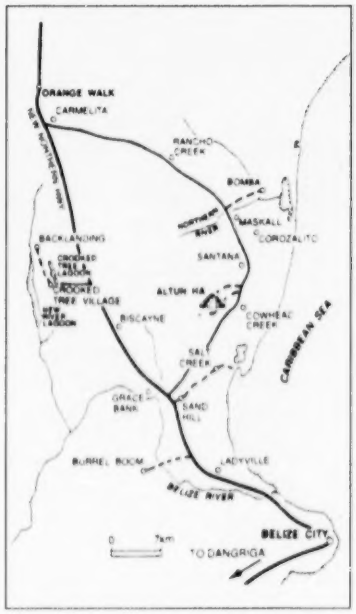
Pyburn also is eager to conduct research related to her own interests at Chau Hiix. A specialist in the rise of civilization, she hopes to track the development of economic classes among the Maya who inhabited the site. She also hopes to test her preliminary theories about how the city functioned economically in relation to two previously known Maya cities in the area—Altun Ha, 35 miles to the east, and Lamanai, 100 miles to the west.

Pyburn's inquiry into social class formation and economic relationships in Maya societies began in graduate school at the University of Arizona. Her dissertation documented the settlement excavation of Nohmul, an archaeological site in northern Belize, and provided new evidence about how the culture's social classes may have evolved. Pyburn says that because poor people leave little nonperishable material behind, evidence of their settlements is difficult for archaeologists to locate, especially in the tropics 1,000 years after their deaths. "One might argue that you're not going to find this evidence at all," she admits. At Nohmul, however, Pyburn did discover traces of the dwellings of ordinary people. "Even people who did not have very much material wealth built their small perishable houses with floors made of packed marl, a chalky limestone that occurs naturally in the region. Since the natural soil is black, you can see white floors in a black matrix." She jokes, "It was undeniable—your basic black-and-white evidence."

Pyburn adds that the locations of these modest houses changed over time. "The earliest ones I found, from the Preclassic Period, 300 A.D. at the latest, were scattered all over the site. There is a big 'downtown' area in the site, and there were lots of big houses on platforms and little houses not on platforms. Then by about 450 A.D. the bigger houses were clumped together instead of being spread out, and around the clumps of bigger houses were small clusters of poor people's houses. There is a kinship structure to the clusters.

"In the very late period of occupation of the site, about 1000 A.D., bigger houses began to be located near the downtown area," Pyburn says. "But the little houses dating from this period are pushed away from the site center, and they form their own little cluster on the edge of an area where intensive agriculture was practiced." This form of agriculture, based on reclaiming swamp lands, is thought to be highly productive, Pyburn says, so it is probable that the farmers were producing food not only for themselves but also for the people who lived in the larger houses. "I saw a shift over time from a kinship-based organization to an economically differentiated society in which there was the development of a class of poor people. As society changes and becomes more complex, the way people are organized changes. Where classes come from is a point of theoretical debate, but what the pattern of change at Nohmul indicated to me was that economic change created economically based class stratification."

Pyburn plans to study the top of the class structure at Chau Hiix. "I want to find out if the elites at Chau Hiix were elite for more than one reason," she says. "In looking at the artifacts of the palaces, I will be asking, 'Are they the results of

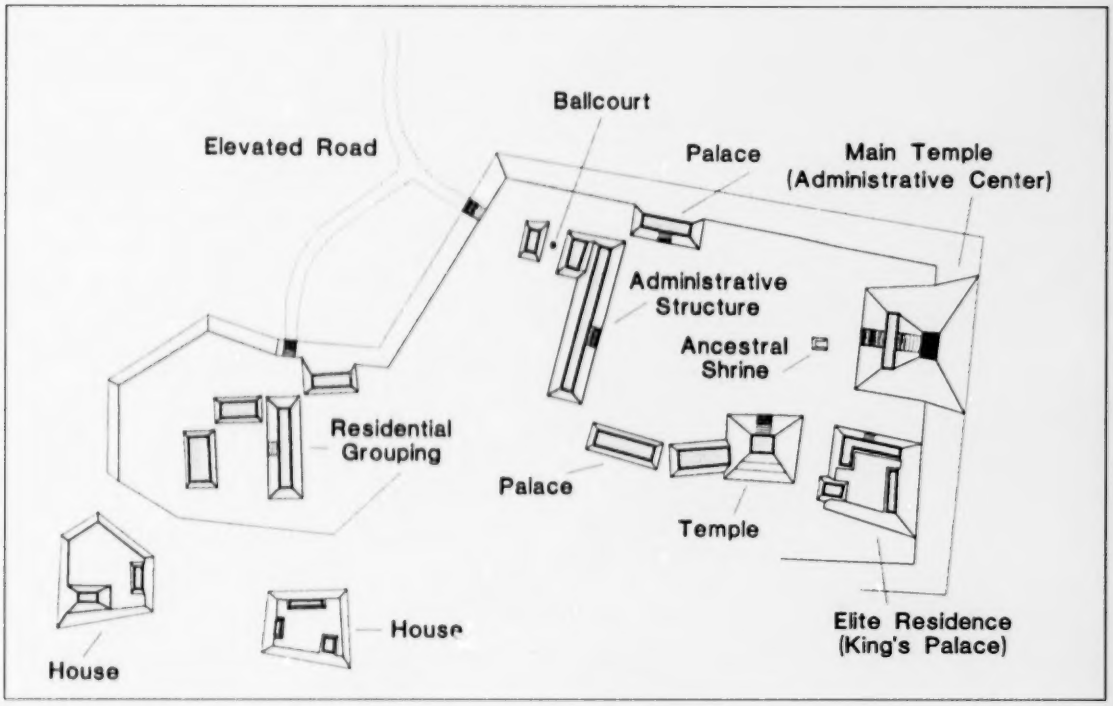


Map showing Crooked Tree in relation to Altun Ha. Chau Hiix is 35 miles west of Altun Ha.

specialists in manufacturing, or are they related to specialists in ideology? Are they related to the iconography of the site next door, or are they related to the elites' paraphernalia in outlying palaces at the same site? Does the ratio of palaces downtown to palaces out of town change over time? Is the wealth being produced strictly from the land, or are there other sources of wealth and prestige and power, such as trade, specialization in manufacturing, or control of religious symbols and ideology?"

Pyburn also wonders if there is evidence of warfare. "There is a carved jade plaque from Altun Ha claiming that Altun Ha was conquered by the *Chac Pax* [lord] from the west, and Chau Hiix is to the west," she says. It is too early to determine what the two sites' relationship over time may have been, but Pyburn has noticed certain distinctions. "I think there are some differences in the continuity of occupation of the two sites," she says. "Chau Hiix apparently had heavier occupation than Altun Ha in later periods."

Pyburn expects the excavation and reconstruction of Chau Hiix to



Layout of Chau Hiix

take 10 years and to cost $3 million. (In December of last year she received word that the National Science Foundation would fund the first season of the project.) Pyburn's team will work with wildlife biologist David Steadman of the New York Museum of Natural History and a landscape architect. "I think there are creative ways that we could make the buildings stable enough that thousands of tourists could walk over them without our having to cut down all the trees," she says. During the excavation, various ancillary projects are certain to develop. Already Pyburn and Wilk have established education and scholarship opportunities for Belizean youths. They have also arranged for used textbooks donated from Indiana schools to be sent to the government school at Crooked Tree, where Dacia Crawford, the oldest daughter of Rudy and Gloria Crawford, is the principal.

This commitment to conducting public-oriented archaeology led Pyburn and Wilk to found the Project for Archaeology in the Public Interest in 1992. The project has preliminary funding from internal grants at IUPUI. In addition to their own experiences at Chau Hiix, archaeological events around the world have further persuaded Pyburn and Wilk of the value of such a project. One occurrence was the Wood Quay incident in Dublin, in which Viking artifacts were uncovered in an area where developers were planning to build a bank. "The local community heard about the archaeological site and had a fit," Pyburn says. The citizens staged protests, hired their own archaeologist, and volunteered to excavate the site themselves. They proved the historical value of the site and revitalized their community, even though the site was eventually destroyed.

Another case that inspired Pyburn was a transformation that took place at an Ecuadorian archaeological site where looting had been a problem. Many people, including some archaeologists, do not understand that most looters are driven by need, Pyburn says. Locals remove artifacts from sites and, in order to buy food and other necessities, sell them to buyers, who often come from outside the community. In Ecuador archaeologists have offered former looters the opportunity to become professional tour guides. Perhaps the Project for Archaeology in the Public Interest will encourage more archaeologists to consider the local economic climate, says Pyburn, who has found it hard not to sympathize with looters after "being in Belize and knowing that people were destroying their archaeological heritage because they were hungry."

Sensitivity to local needs and interests informs the research design of a recently proposed study by the Project for Archaeology in the Public Interest. Researchers will investigate the history of African Americans in Indianapolis, excavating in the Ransom Place neighborhood, on the near northwest side of downtown. This area has a long history as a cultural center of the Indianapolis African American community; it was witness to dramatic changes in the economic and social opportunities

open to African Americans in the city. "Understanding how that process was interrelated with the economy of Indianapolis is an intellectual question that is intriguing to me and might be interesting to members of the African American community of Indianapolis today," Pyburn says.

"The key to the success of the project lies in community interest and input," Pyburn says. She hopes to work with Crispus Attucks High School and a variety of local civic and cultural groups, as well as with residents of the Ransom Place neighborhood, to develop a research design that has both academic significance and practical value. "Most people think archaeology is just Anglo Americans digging up Native Americans, with no relevance for real life. We as archaeologists must do a better job of promoting the kinds of knowledge that our discipline has to offer, not just so people will want to conserve archaeological resources, but so more kinds of people will be attracted to the discipline. We need a multiethnic constituency. Nonwhite archaeologists are very rare in the United States. Nevertheless, the prehistory and history of ethnic groups are extremely important fields that should not be written only by Anglo Americans." Jean Spears, a historian who lives in Ransom Place, will coordinate the investigation with community interests. "Up to now, all the enthusiasm and direction of the project has come through Jean," Pyburn says.

Undertakings such as the Project for Archaeology in the Public Interest fulfill Pyburn's earliest dreams of a career based on scientific and sociological inquiry. Her father was a field biologist and her mother a social worker with a keen interest in archaeology. Spending summers in remote parts of Mexico and Colombia seemed natural to Pyburn. "I grew up thinking fieldwork was a part of everybody's life," she says.

"I saw a shift over time from a kinship-based organization to an economically differentiated society in which there was the development of a class of poor people."

Now Pyburn encourages girls and young women to consider scientific careers. "The quality of our discipline is diminished by the shortage of females," she says. She has noticed that women in anthropology tend to elicit new kinds of information from the societies they study. In support of this observation she cites changes over time as increasing numbers of female anthropologists have contributed to the scholarship on traditional hunting-and-gathering societies. "For fifty years we had a model of 'man the hunter,'" Pyburn says. "There was a vision that the men brought home all the food, and the women stood around and waited and kept the fire going."

Even before the number of women in the discipline had grown significantly, male ethnographers were finding that men in these societies actually hunted at widely spaced intervals, and that women caught small game and collected vegetables. But after delineating more clearly the function of women in these societies, male ethnographers still had difficulty interpreting the women's actions because a lack of rapport often existed. Then female anthropologists began recording these same actions. "Observed by another woman, what these women were doing seemed much more concise and organized and purposeful," Pyburn says. "And now we know that, yes, in most of these societies men do hunt, but that's not even half the story of people's diets. In fact, societies are much more interesting when you look at both what men do and what women do." But women's contributions to anthropology are not limited to domestic issues. Pyburn says women now also ask the "big questions," as she does, about "big things," such as the rise of civilization.

Pyburn's most satisfying professional experiences come about whenever she is opening up her discipline—to local inhabitants near archaeological sites, to women, to traditionally underrepresented ethnic groups, or to students who are taking an archaeology course as an elective. She recalls her first semester at IUPUI, in the fall of 1990, when she enjoyed what she considers an ideal classroom situation. "I taught a night class in Mesoamerican archaeology to a group of undergraduates," she says. "Many of the students had full-time jobs and relatively little time to devote to course work. Most of them came in wearing their business clothes. All of them were there because they wanted to be. They were not bored, they asked lots of questions, and we had a spectacular time. It was the kind of class I like to teach. I *want* to be interrupted." Pyburn will be conducting a field school at Chau Hiix in 1994 and hopes to include nontraditional students in the program. "It's the nonmajors for whom I feel it's most important to have a chance to expand their horizons," she says. "It really changes people to be in another country for three or four months, digging holes, living in a different way. I get a tremendous charge watching the ways people develop under those circumstances."

This spirit of inclusiveness pervades Pyburn's teaching and her research efforts. "Nobody owns the past, and I don't want to own somebody else's past," she says. But I think the past is valuable, and I like the idea of helping people get access to it—to their past and their heritage, but also to the past in general. I don't think you have to be a Maya to get value from understanding Mayas."

—*Karen Grooms*

News from the Frontier

Emilio Moran, Professor of Anthropology, Indiana University Bloomington

Seated comfortably in his Bloomington office, Emilio Moran leans back in his chair, fingertips pressed together, and observes the image flickering on the computer screen on his desk. That image represents one step in his latest research project, a large-scale study of secondary growth following deforestation in the Amazon rain forest. By using both satellite data and detailed information from field research, Moran hopes to define the social, economic, biological, and geographical characteristics of regrowth in different regions within the Amazon basin.

Moran, Indiana University professor of anthropology, and graduate assistant Eduardo Brondizio have spent this academic year analyzing the data from satellite pictures and field research, which they and three Brazilian collaborators gathered in Brazil during the summer of 1992. Their work is supported by the National Science Foundation (NSF) and the Department of Energy. The study is expected to take at least 10 years as it moves from current sites to different environmental zones in the Amazon.

Moran took the first step toward his present project in 1987, when he attended an NSF-sponsored workshop on the applications of remote sensing to ecological anthropology. At the workshop, conferees were exposed to the possible benefits of using satellite sensors in their work. When asked about ways to apply the new technology to their research, Moran immediately saw numerous possibilities. "I was very excited," recalls Moran, "because we all came up with a number of questions that we had always wanted to address but had never been able to—because there was no technical way to do it." Each of the 12 scholars at the workshop suggested ways to apply this new technology.

Two years passed before Moran was able to turn his attention to the goal of applying the technology. He received a Fulbright Award in 1989 and a Guggenheim Fellowship in 1989–1990 to write a book in Portuguese on the ecology of the Amazon, *A Ecologia Humana das Populações da Amazonia*. The book was published in Brazil in 1990; a revised English edition will be published this year by the University of Iowa Press under the title *Through Amazonian Eyes: The Human Ecology of Amazonian Populations*. As part of his Fulbright responsibilities in Brazil, Moran taught two intensive graduate human ecology courses based on themes in the book. Another research grant sent him and nine graduate students back to the Amazon to study the strategies of land use at Marajo Island, a delta at the mouth of the Amazon. Three of these nine students are now graduate students at IU.

While Moran was in Brazil in 1989, media coverage of the deforestation of the Amazon was at its peak. "There was tremendous pressure on Brazil," he says. "To me, a lot of it didn't ring true. In almost every farm in the Amazon where I had worked, farmers were concerned less with deforestation than with the fact that the forest grew back too quickly. You burn the forest, and within thirty days you get regrowth and resprouting of trees." These findings contrasted with the prevailing view that deforested areas became deserts.

Here was an opportunity, finally, to use the technology he had been exposed to in the 1987 workshop. Moran was convinced

Amazon rain forest

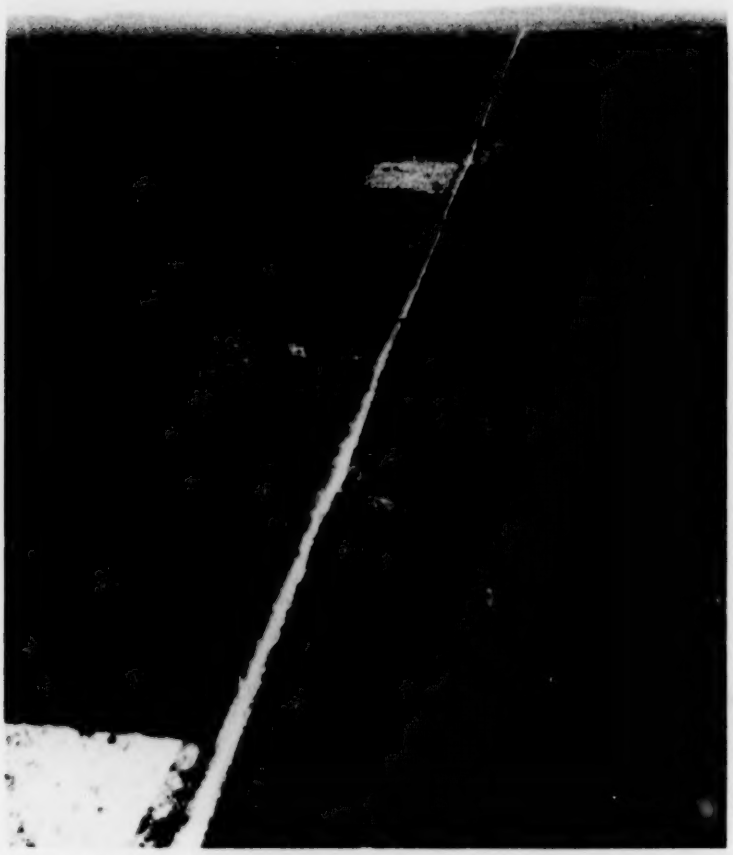
that he had a case, and he was optimistic that satellite data on regrowth would substantiate his earlier observations. "I knew about regrowth," he explains. "But if I were to talk about regrowth, people would question it. People would say, well, yes, in your village, but that's not true elsewhere."

Moran selected several areas in the Amazon rain forest that had been cleared. He has been following their progress over time. "In particular, I will be looking for areas that have unnatural rates of regrowth, either too fast or too slow," he says. "Then, by going into the field, I will find out what those people are doing that accelerates or retards regrowth." He is also analyzing factors such as soil quality, how the land is being used, and the size of the area cleared.

Although several interpretations of what is happening in the Amazon basin exist, there has been no reliable way to assess them. But since Moran's sampling approach is scaled into distinct units representative of rich to poor soil quality, it can be used to reconstruct the larger picture of what is happening in the Amazon basin. "With the satellite data," explains Moran, "we can clearly see how much land is cleared, how much is growing back, and how much is not growing." Projected to last seven to ten years, this is the most extensive study that has been conducted on regrowth in the Amazon and the first to use satellite data and field studies across a broad temporal and spatial scale. It is a new approach to understanding the dynamics of the Amazon rain forest, and Moran initially felt some concern about its reception. "My biggest worry was that a lot of people didn't want to hear about forest regrowth," Moran says. "There was so much interest in, and support for, stopping deforestation that I was afraid they might interpret this project as my saying that it's not so bad, which is not what I was saying at all. I was saying that some regions are resilient and others extremely fragile—and that we had to pay attention to these differences. If the forest is growing back, we need to account for its variable rate and the variables responsible for recovery and degradation.

Yet Moran's project was positively received, partly because of his stature in the anthropological and Amazonian studies communities. Moran played a leading role in exploding out the diversity of the Amazon basin in the 1970s, when the basin was thought to be homogeneous. The Amazon basin is a huge land mass, containing myriad ecosystems—each with different climates, soils, and human histories. For 20 years Moran's research has been focused on ways to wisely monitor human influence on this rich, widely diversified land. He has opposed "treating people as a lumpen proletariat and treating the Amazon as undifferentiated," by empirically demonstrating social and environmental diversity. These newest research activities reveal a natural progression from his earlier studies.

Moran's interests have always spanned traditional barriers among disciplines. His bachelor's degree in Spanish literature from Spring Hill College in Mobile, Alabama, was more a function of circumstance than choice. "Spring Hill was a small liberal arts school and had a stronger literature program than history program, so I majored in literature with course work equivalent to a history major's," he explains. Even after earning a master's degree in Latin American history at the University of Florida in Gainesville, Moran was still searching for a field in which he could deal with the human condition. "I knew that I



Amazon highway

didn't want to continue in history," he recalls, "not because I no longer valued or was interested in history, but because I wanted to become more actively involved in the social issues I had come across, such as slavery and economic development." Although he knew that he was interested in the development of South America, he was not sure of the best way to pursue that interest. Still seeking a discipline that met his needs, he took courses in economics at the University of North Carolina at Chapel Hill.

Moran's quandary was that he wanted to study patterns of development in South America at a time when economic scholarship in that area was limited. "I didn't know whether I really wanted to be in economics, given that I was interested in development economics," says Moran. "At the time, there wasn't such a thing. A few early articles were beginning to come out, but the rest of the field didn't know about it or value it. My adviser in economics admitted the inadequacies of neoclassical theory for the questions I posed."

The Latin American studies director at the University of Florida, William Carter, suggested that Moran investigate economic and ecological anthropology. Later Moran learned that the University of Florida had hired Charles Wagley, the Franz Boas Professor in the Department of Anthropology at Columbia University. Wagley was one of the most highly respected scholars in Latin American and Brazilian studies. The opportunity to work with him coincided with the offer of a fellowship, and Moran returned to Florida.

At that stage, Moran's interests still lay elsewhere in Brazil, not in the Amazon basin. "All the key investigations were going on in the southern and northeastern parts of Brazil," he explains. "The Amazon was not even discussed except by a few anthropologists who were looking at symbolism, kinship, and other topics."

But that situation was soon to change. Wagley was invited to Brazil for a major international conference. When he returned to the University of Florida after attending the conference, Wagley gave a colloquium, which Moran attended, on changes occurring in the Amazon. During the colloquium Wagley spoke about a new program to open up the Amazon by means of highways. A road was being built to attract people from all over Brazil to the Amazon. Hundreds of thousands of families would be relocated over a period of only five years. It was unknown territory—geographically, culturally, and economically.

During the colloquium, Wagley made his feelings clear: to him, the building of the highway was the most important thing that was happening in South America, in both social and ecological terms. Moran was immediately captivated. "The next day I volunteered to go," he says. "I felt that this was a chance to deal with issues of significance to the public. If anthropology had something to say, something that could influence the social and environmental impact of the highway and the engineering decisions behind its construction, then an anthropologist ought to be there to study the highway project."

But volunteering to go to the Amazon was not enough. Moran had to prepare by taking courses in a variety of earth sciences. "To deal with the issues in the Amazon, to understand the environmental impact, you had to know ecology," Moran explains. "You had to know something about soils, about geography, about

agronomy." Moran had finally found his focus, in both a geographic and a scholarly sense. "Anthropologists spend a lot of time looking at people, asking what their side of the story is and then studying it scientifically," he says.

Moran was about to enter one of the most dynamic and controversial arguments in anthropology. For 30 years anthropologists had been debating whether the Amazon could support societies using intensive agriculture. Some archaeologists had asserted, since the 1950s, that the soils in the Amazon were too poor to support a complex society.

Moran's research sent him back to this big question: were there adequate soils in the Amazon? They had been described as uniformly poor, yet he found a surprising amount of variation in soils. "There were significant areas of extremely rich soils, the best anyone could want," he says. "These soils were very deep, and very good." But there were also very poor soils throughout the area, and farmers had to adjust to variations within the region.

"You don't adapt to a *region*," Moran explains, "you adapt to very specific resources within that region. Things like drainage, the amount of rainfall, the right soil type for a given crop." For instance, he found that some plant species grew only in better soils. That meant that local indigenous people who were familiar with plant life in a certain area were often better able to pick out richer soils than trained soil scientists. Other plants could thrive even in poor soils. Crop choice was no less significant than soil choice.

In the course of his research, Moran showed why not all farmers succeeded. Some immigrants, for example, used tree height and width as indicators of good soil type. They assumed that taller, wider trees indicated richer soils. Even though this method had been widely used—for example, it was also employed on the North American frontier—it was unreliable, Moran says.

In the Amazon forest, the word "farming" often means cattle ranching.

"It might work somewhere," he acknowledges, "but it certainly didn't work very well in either of those areas. In fact, the larger the tree and the wider its diameter, the poorer the soil." So people who relied on tree size as an indicator chose exactly the opposite of what they were trying to select.

Farming success depended not only on the nature of the land being farmed, but also on the complex relationship between the farmer and the land. Moran found that certain kinds of experience, not necessarily with soils and agricultural production, tended to influence a farmer's success. Most researchers had assumed that people from the more affluent southern part of Brazil would be better farmers than those from the impoverished northeast. Yet Moran's research clearly showed that the agricultural practices in the south were not appropriate models for better farming in the Amazon. Tellingly, the southern farmers fared worse than those who already knew the area.

The most successful farmers had formerly owned or managed private property. Others, who had not previously had decision-making authority, were not able to handle the credit they received and spent it on consumer goods instead of using it to increase production. Nor were people who were new to large-scale production able to gain as much from the labor of hired help, because these farmers were not accustomed to giving orders and keeping track of people's effort.

After 14 months in the Amazon, Moran returned to Gainesville, completed his dissertation, and joined the IU faculty. After several more trips and more reflection, he wrote a book that gave an account of this work. *Developing the Amazon* was published by Indiana University Press in 1981.

In 1984 Moran returned to the Amazon as a Tinker Foundation fellow to look at community formation. His interests had turned to the development of the social order in frontier societies—how they came to be in the first place. Moran explains, "If you take any community, at some point in history it doesn't exist. The organization's structure comes out of the interaction of individuals and families during the beginning. Who determines the rules of the game? Who decides on the proper rules and laws? How do things end up being traditions? All this is negotiated by early settlers."

Moran had found a perfect place to examine social issues. He began asking questions about how people negotiate their political and economic arrangements. Who emerges as the leader, the patron, the client? Do people really get ahead on the frontier?

Drawing on his background as a historian, Moran found an interesting parallel in the history of the United States frontier. The people who fared best on the North American forested frontiers arrived during the first five to ten years and had certain kinds of experience. "Not everybody goes to the frontier the first day," explains Moran. "You tend to have poorer, younger people, but not the poorest of the poor. There are a limited number of spaces available, so if you get there too late, there's no more room." So those settlers who prospered earlier had more sustained success than those, however wealthy, who arrived later.

Parallels between the early North American frontier and the ongoing settlement of the Amazon are apparent. But there is one major difference, and that has to do with the level of governmental involvement. The United States had a tradition of local community control, which gave pioneers freedom to construct their own political organization and local taxation. In Brazil, however, there is greater federal authority and more centralized control. Moran wondered how this difference would affect settlers' efforts. Although he found that greater federal control did limit the success of individual pioneers, there were still individuals who were able to do well and move into positions of power within the community.

Currently, Moran is involved in several projects connected to his research agenda, which include chairing the American Anthropological Association's Task Force on the Environment. Throughout his career, Moran has combined social and earth sciences, providing a prime example of the interdisciplinary potential of ecological research. As chairman of this task force, Moran has been able to do more than set an example—he had the opportunity at a National Research Council hearing in early 1992 to voice his feelings about spanning disciplinary boundaries. According to Moran, we must

Logo for the Anthropological Center for Training and Research on Global Environmental Change

overcome this current limitation on environmental research. "We can understand the human dimensions of global change only if we understand the total human enviroment," explains Moran.

Moran hopes that a forum for interactions between the earth and social sciences will be created in the proposed National Institutes for the Environment (NIE), a governing body of environmental studies that would support research on the environment. Legislation for the NIE has been scheduled to come before Congress this spring. The American Anthropological Association, with Moran as its major spokesperson, stood behind the formation of such an organization, provided, Moran says, "the institutes overcome the tendency to define research in terms of disciplinary priority rather than in terms of a coherent, interdisciplinary approach to pervasive environmental problems." The NIE that Moran envisions will support an interdisciplinary, comprehensive, problem-oriented research agenda, one that will allow social and earth scientists to work together. "We're beginning to open up to teamwork," he says. "As we become more comfortable with team research, we're discovering how much more we can learn by working together, and how much more credible our research becomes."

On a smaller but more immediate scale, Moran's interdisciplinary interests have led to the creation of one of the most innovative programs at Indiana University, the Anthropological Center for Training and Research on Global Environmental Change (ACT). With Moran as its director, ACT was approved by the university in March of 1992. Although its goal—to develop scholars—is a classic one, the methods and philosophy behind ACT are new. Scholars at the center will learn to approach environmental research in a way that is both international and interdisciplinary, focusing on the human side of global environmental change and keeping in mind the concerns of local populations in the geographic areas under study. A statement of ACT's mission proclaims the center's intention to "think globally, act locally" in its research and training activities.

Moran envisions ACT as a place where researchers can learn to use new technology and research methods to carry on their work. Researchers from all disciplines will use computerized network and geographical mapping systems, and record and interpret satellite data as complements to other techniques already in use.

Eventually, Moran hopes, the center will fill a gap between the earth and social sciences. "Most researchers active in the earth sciences don't know how to collaborate and use the theories and ideas of the social sciences," he says. "Most social scientists, on the other hand, are unfamiliar with the technological and empirical nature of data offered by the earth sciences. I hope that places such as the center will make them both more receptive to each other and able to conceive research that is of more than disciplinary interest. We are formulating research and training programs to achieve these goals."

ACT has received a positive international response. "We've already had researchers from Japan, India, Africa, the United States, and Brazil indicate that they are eager to come for training," says Moran. "As soon as we prepare the space and equipment, our facilities will be full immediately." What better proof of the need for ACT than a waiting list? And what better director for the center than Emilio Moran?

—*Renée Despres*

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